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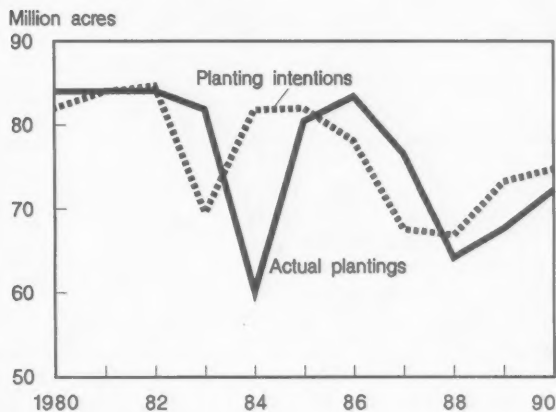
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Feed

Situation and Outlook Report

Corn Acres: Intentions Vs. Actual Plantings



CONTENTS

	Page
Summary	3
Feed Grain Supply and Use	4
Corn	4
Sorghum	6
Barley Situation	7
Oats Situation	8
Hay Situation	9
Feed Demand	9
Food Seed and Industrial Use of Corn	10
Transportation Update	11
World Coarse Grain Outlook	13
List of Tables	18

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Summary

U.S. and world 1989/90 ending stocks are forecast to be the lowest since 1983/84 as record use exceeds the sharply higher production. Initial projections for 1990/91 show much the same pattern—expanding production continuing to trail use and a further drawdown in stocks.

U.S. 1989/90 ending stocks of feed grains are forecast at 46 million metric tons. The supply is 1.4 percent above a year earlier, but use is up 11 percent. Increases in exports, 9 percent, and feed and residual disappearance, 15 percent, underlie the rise in use.

Projections of U.S. 1990/91 supply and use indicate a further small reduction in ending stocks and continued relatively strong prices. Feed grain production is projected at 237.3 million tons, 7 percent above 1989. However, with carryin stocks down nearly 30 percent, supply is off 1 percent. Use is up marginally from this year as larger domestic use offsets lower exports. Use is projected to exceed production for the fourth consecutive year, reducing ending stocks about 9 percent to 41.9 million tons and an ending stocks-to-use ratio of 17.3, the lowest since 1975/76.

Total corn disappearance for 1989/90 is forecast up 12 percent to 8.1 billion bushels, about 600 million above production. Ending stocks are forecast at 1.3 billion and the ending stocks-to-use ratio at 16.4.

The 1990 corn crop is projected to be 8.1 billion bushels, up 8 percent from 1989. However, with forecast carryin stocks down 31 percent, total 1990/91 supply of 9.4 billion bushels is about the same as this year. Larger domestic use is expected to more than offset lower exports, reducing ending stocks. The price received by farmers is expected to average \$2.25 to \$2.65 per bushel, compared with \$2.30 to \$2.40 forecast for 1989/90.

Sorghum and barley supply and use show about the same pattern as corn. Production rebounded in 1989 and additional gains are projected for 1990, but stocks are expected to decline in 1989/90 and 1990/91 as use exceeds production. Oats is the only feed grain forecast to show a year-to-year gain in stocks in 1989/90. However, 1990/91 ending stocks of oats are projected down slightly as fewer harvested acres lead to a drop in production.

Hay production for 1989 of 145.4 million short tons was 15 percent above the drought-reduced level of 1988. In March, 1990 harvested area for hay was estimated just over 62.0 million acres, continuing a decline of recent years.

Feed and residual use of the four feed grains plus wheat in 1989/90 is forecast 18 percent above the 123 million metric tons used in 1988/89. From September 1989 through February 1990, feed and residual use of corn was up 15 percent from a year earlier. During the remainder of 1989/90, demand will be strengthened by more cattle on feed than last year and increased broilers, turkeys and layers.

Food, seed, and industrial use of corn in 1989/90 is expected to be up 3 percent from 1988/89. Most of the increase is in high fructose corn syrup (HFCS) and alcohol production. With a normal summer, HFCS is expected to increase to meet greater demand from the soft drink industry. While domestic sales of alcohol blended gasoline have been below last year, increased ethanol exports are expected to fill the gap.

Near-normal navigation conditions on the Mississippi River and grain exports below January's peak have returned the U.S. transportation system to normal operations. Generally adequate transportation services are expected to be available in coming months and rates are likely to continue nearly unchanged. However, difficult navigation conditions are likely to recur this fall because of projected low water flows from the Missouri River.

Foreign production of coarse grains in 1989/90 is estimated at 577 million tons, down marginally from the previous year, but harvests in the Southern Hemisphere are not yet complete. In 1989/90, foreign consumption is forecast up 2 percent, mostly accounted for by large increases in the Soviet Union and Eastern Europe. World trade in 1989/90 is forecast at 99.5 million tons, the third highest on record, with U.S. exports the most since 1980/81 and the U.S. market share at 68 percent, second highest ever.

The initial projection of 1990/91 global production of coarse grains shows a rise of nearly 3 percent to 820 million tons, led by the United States. Global coarse grain consumption is projected at 828 million tons, about matching the forecast 1989/90 record. This would be the fourth consecutive year that global use exceeds production and world stocks are projected to fall again in 1990/91, possibly to the lowest level since 1975/76. Foreign production is forecast to grow nearly 1 percent in 1990/91, but foreign use may drop slightly because of larger use of wheat for feeding. World trade may fall about 4 percent, largely reflecting expectations of increased trade in feed quality wheat.

Feed Grain Supply and Use

The feed grain supply for 1989/90 is forecast at 288.2 million metric tons, 1.4 percent larger than 1988/89. The supply is up 100,000 tons from the forecast carried in the February *Feed Situation and Outlook* report, reflecting more oats imports than expected earlier. Not included in the above supply is an increase in the amount of wheat expected to be used for feed during June-August this year compared with a year earlier.

Disappearance for 1989/90 is forecast at 242.2 million tons, 11 percent more than 1988/89, and 3.6 million tons above the forecast in February. Feed and residual disappearance has been increased by 3.8 million tons and exports by 300,000. Partly offsetting is a 500,000-ton decrease in forecast food, seed, and industrial (FSI) use. Compared with the February forecast, forecast ending stocks are down 3.5 million tons to 46 million and ending stocks-to-use ratio from 20.7 to 19. The changes in use and stocks are primarily in corn so the price reaction also is mainly in corn.

The National Agricultural Statistical Service (NASS) surveyed farmers and elevators for all four feed grains on March 1 this year. Last year, only corn and barley stocks were estimated in March. Stocks of feed grains March 1 totaled 143.9 million tons, indicating a disappearance of 144.3 million from the beginning of the crop year to March 1. Disappearance was 59.6 percent of total forecast use of 242.2 million tons, same as the average rate of use during the period from beginning stocks to April 1 for the 5 years 1980/81 through 1984/85. This 5-year period was the most recent for which a spring stock report was available for all four feed grains.

The above supply and use totals combine crop years beginning June 1 for barley and oats, and September 1 for corn and sorghum. A June/May year enables a comparison for the same period for all four grains. Stocks of feed grains June 1, 1989, were 109.4 million tons, 1989 production was 221.1 million, and imports for June 1989-February 1990 were 1.4 million for a total supply of 331.9 million tons. March 1 stocks of 143.9 million tons indicate disappearance for June-February of 188 million tons, or 56.6 percent of supply.

Smaller Feed Grain Supply Projected for 1990/91

The supply of feed grains for 1990/91 is projected to be 284.5 million tons, down 1 percent from this year and about the same as 1988/89. Production is expected to total 237.3 million tons, up 16.2 million from the 1989 crop. However, beginning stocks are forecast at 46 million tons, down 19.9 million from a year earlier.

In early March, farmers reported intentions to plant 106.2 million acres to feed grains this year, the same as they actu-

ally planted in 1989. A larger proportion of plantings to corn this year (70 percent of intended area compared with 68 percent of area planted last year), improved subsoil moisture, and better planting and growing conditions this year are expected to result in a larger harvest of feed grains.

Disappearance for 1990/91 is projected at 242.6 million tons, up slightly because increases in feed and residual disappearance and FSI use are expected to offset lower exports. Also, use is projected to exceed production again, reducing ending stocks about 9 percent to 41.9 million tons. The projected ending stocks-to-use ratio for 1990/91 is 17.3, compared with 19 forecast for this year. Tightening stocks projected for 1990/91 are expected to keep feed grain prices firm next year.

Corn

Second-Quarter Use Up 21 Percent

March 1 stocks of corn were a little above 4.8 billion bushels, indicating disappearance for the December-February quarter of nearly 2.27 billion bushels—21 percent larger than a year earlier. Exports were up 36 percent, feed and residual disappearance 19 percent, and FSI 4 percent.

In February, the forecast for exports was raised 125 million bushels to 2.275 billion, which reduced forecast ending stocks to slightly under 1.5 billion bushels and lowered the ending-stocks-to-use ratio to 18.5 percent. In April, based on disappearance for the second quarter, feed and residual was raised 150 million bushels to 4.55 billion. This action reduced expected ending stocks to a little over 1.3 billion bushels and decreased the stocks-to-use ratio to 16.4.

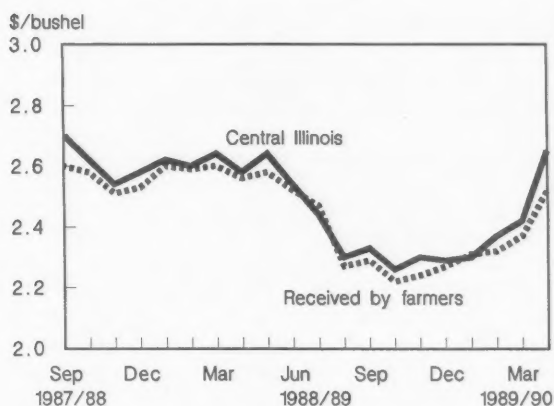
In May, exports were raised by 25 million bushels to 2.3 billion, but FSI use was decreased 25 million bushels to 1.28 billion. Domestic use of ethanol in gasoline blending has been running significantly below year-earlier levels and it now appears that this decrease will equal the increase in exports.

Corn prices held relatively stable from September through early February. The July 1990 future price showed little fluctuation about an average of \$2.50 throughout this period. However, with the forecast tightening of stocks and strong export pace, the July futures price started to move up in mid-February, and with further reduction of expected ending stocks in April, the increase gained momentum. By early May, the July future price was in the \$2.90 range. Corn prices, near term and new crop, will be sensitive to weather conditions through mid-July. Threat of drought or hot weather during the pollination period likely would send prices higher, but if growing conditions are favorable through mid-July, they are expected to start slipping seasonally toward the harvest low in October or November.

Table 1--Corn supply and disappearance, December - February

Item	1988/89	1989/90
-----Million bushels-----		
Supply		
Stocks Dec. 1	7,071.6	7,079.2
CCC	611.0	628.2
FOR	1,077.4	468.4
Loan	747.9	492.7
Free	4,635.3	5,489.9
Imports	.6	.5
Total	7,072.2	7,079.7
Disappearance		
FSI	284.0	295.0
Exports	508.3	681.6
Feed and residual	1,076.2	1,290.4
Total	1,869.3	2,267.0
Stocks March 1	5,204.6	4,812.7
CCC	465.0	537.2
FOR	995.3	417.0
Loan	1,062.5	783.9
Free	2,681.8	3,074.6

Figure 1

Monthly Average Corn Prices**Corn Growers Intend to Plant 74.8 Million Acres**

Farmers reported intentions to plant 74.8 million acres to corn this year, 3.5 percent more than last year's 72.3 million. Of the 2.5-million-acre increase, 1.8 million are reported to be in the eastern Corn Belt, the Lake States, and the Northern Plains. In contrast, growers in the western Corn Belt (Iowa and Missouri) intend to plant the same area as last year. However, yields there likely have the greatest potential for increasing over last year's average of 114.5 bushels per acre.

1990 Program Participation Declined Over 3 Percent

Farmers enrolled 62.9 million acres of corn in the feed grain program this spring, 76.2 percent of the effective corn base of 82.7 million acres. In 1989, 65.7 million acres were enrolled, or 79.5 percent of base. Thus, 19.7 million acres of base are not enrolled this year, 2.7 million more than the 17.0 million acres of corn base outside the program last year.

Corn enrolled base to be idled under annual programs this year is expected to total 9.8 million acres, 6.1 million in the acreage reduction program (ARP) and 3.7 million in the 0/92 option. This would leave about 53.1 million acres of enrolled base to be planted. In 1989, the ARP was 6.3 million acres and 4.5 million were in 0/92, leaving 54.9 million acres of plantable base of which some was shifted to soybeans and sunflowers under special program provisions (10/25). During a special signup period, January 16 through February 16, 1990, farmers requested authorization to plant 1.9 million acres of soybeans and 10,000 acres of sunflowers in lieu of their permitted acreage for 1990 feed grains, wheat, cotton, and rice. Last year, farmers were authorized to shift 2.8 million acres of program base to soybeans and sunflowers, however, it appears that they actually did not shift the full authorized quantity.

Planting intentions were surveyed in early March. Corn prices strengthened substantially from early March to early May and some farmers may have revised their plans as a result. Farmers who enrolled in the program and changed their plans after the April 13 closing date for enrollment are assessed a penalty if they do not comply with the program (i.e., plant in excess of their permitted acreage). The penalty for withdrawing from the program is 20 percent of the target price times the program yield times the area required to be diverted to conservation use in the signed contract. In addition, the advanced deficiency payments would have to be repaid, including interest. This penalty may discourage producers from withdrawing from the program, but there is no penalty for changing from 0/92 enrollment to planting the permitted base. There were 3.7 million acres of base to be idled under the 0/92 option in the preliminary enrollment report.

Prospects for the 1990 corn crop are better than a year ago. The subsoil moisture at the beginning of the planting season was improved from last year, particularly in the western Corn Belt, Northern Plains, and Lake States. An index of the subsoil moisture condition for mid-April 1990 was 1.1, compared with 3.9 a year earlier. The index measures inches

of rainfall needed to bring the Long-Term Palmer Drought Index to normal weighted by area harvested in 1987 in each weather district for the 17 major producing States. A small value of the index indicates that subsoil moisture is near the long-term normal. Through May 20, the crop was 76 percent planted in the 17 major producing States, 7 points behind plantings in 1989 and 12 points below the 5-year average. The National Weather Service forecasts below-normal temperatures and above-normal precipitation in the Corn Belt for June and July, factors favorable to corn yield.

1990 Supply Projection Reflects Continued Tight Supplies

On May 10, USDA's World Agricultural Outlook Board released its first projection of supply and demand for the 1990/91 crop year. The corn crop is projected at 8.1 billion bushels. Carryin stocks, forecast at 1.33 billion bushels, plus a small amount of imports round out the supply at 9.43 billion bushels, almost equal to 1989/90.

Disappearance for 1990/91 is projected at 8.17 billion bushels, compared with forecast use of 8.13 billion for the current year. FSI is expected to increase by 35 million bushels and feed and residual disappearance by 100 million bushels. Partly offsetting these increases is a projected drop in exports of 100 million, leaving the net gain in use at 35 million bushels. However, use would exceed the corn crop and ending stocks would decrease 63 million bushels to 1.267 billion. The ending stocks-to-use ratio would decline from 16.4 expected for 1989/90 to 15.5 in 1990/91. Corn prices are expected to increase and again be very sensitive to planting and growing conditions for the 1991 crop.

Sorghum

The sorghum supply for 1989/90 equals 1.06 billion bushels, comprised of 440 million bushels of beginning stocks and 618 million of production. However, all but 71 million bushels of the 1989/90 carryin were tied up in Commodity Credit Corporation (CCC) inventories and the Farmer Owned Reserve (FOR). Unlike earlier years, only about 3 percent of the 1989 crop has been put under loan. However, the loan rate is more than 60 cents a bushel below the mid-April farm price so the loan is not an impediment to marketing this grain.

The CCC continues to reduce its inventory. On May 1, 199.4 million bushels were in inventory, down from 341 million on September 1, 1989. By the end of August, CCC is expected to reduce the inventory to 190 million bushels. Farmers are also reducing FOR stocks. On May 1, they totaled 12.9 million bushels, a decline of 15.1 million from September 1. About 3.9 million bushels were redeemed with generic certificates and the balance matured and were delivered to the CCC.

In the 1989 marketing year, FSI use of sorghum is expected to decline about a third from a year ago. The primary reason is the decline in the use of sorghum to produce alcohol. Feed and residual use in 1989/90 is expected to increase 12 percent from the drought-reduced level of 1988/89 because of lower prices. Exports in 1989/90 are forecast to decline 19 percent from 1988/89. If use turns out as expected, ending stocks would total 267 million bushels of which 190 million would be in CCC inventories and 10 million in the FOR.

Sorghum prices tend to move with corn prices, so prices declined at the end of the 1988/89 marketing year as new crop supplies were anticipated. In 1989/90, the price premium for corn relative to sorghum has declined slightly. In the 1988/89 marketing year, prices for No. 2 yellow corn at Kansas City were 12 percent per cwt higher than No. 2 yellow sorghum, but for September 1989 through April 1990 only 8 to 10 percent higher.

In early March, farmers reported intentions to plant 11.5 million acres of sorghum this year, down 9 percent from last year. Farmers in the top five States in terms of area planted plan to decrease acreage an average of 8 percent.

Based on these intentions and average yields, the sorghum crop in 1990 is projected to total 685 million bushels. Beginning stocks are forecast to be 267 million bushels, which would put the total supply of sorghum for 1990/91 at 952 million bushels, 10 percent below 1989/90. Although use is projected to drop 3 percent from 1989/90, it will still exceed production and stocks are projected down 30 percent. Also with 1990/91 ending stocks of corn likely to decline slightly and corn prices averaging higher, sorghum prices at the farm should average \$2.05 to \$2.45 per bushel.

Sorghum Base Down and Enrollment Up in 1990

Farmers enrolled 11.6 million acres of sorghum in the feed grain program this spring, 75.3 percent of the effective sorghum base of 15.4 million acres. Last year, farmers enrolled 71 percent of the 16.2 million sorghum base in the program. Part of the decrease in effective base this year reflects area added to the long-term conservation reserve program.

Enrolled 1990 base to be idled under annual programs is expected to include 1 million acres of APR and 1.9 million acres under the 0/92 option. This would leave 8.7 million acres of the enrolled base to be planted. If the base not enrolled, 3.8 million acres, is also planted, the potential plantings could be 12.5 million acres. Last year, 12.6 million acres were planted out of a potential area of 12.9 million (enrolled base less program idled area, 8.2 million, plus 4.7 million of base not in the program).

Barley Situation

Barley supplies for 1989/90, at 610 million bushels, are only slightly below the level of the preceding year. In 1986/87, record production and large beginning inventories coupled for a supply about 55 percent larger than the current crop year.

In 1989/90, supplies have been bolstered by production of over 400 million bushels, up by almost 40 percent from the drought-ravaged 1988/89 crop. Production gains are the result of a year-to-year increase in both the harvested area (8.3 million acres compared to 7.6 million) and yields (48.6 and 38.0 bushels per acre). This increase in production, however is not quite enough to offset a decline in beginning inventories for the year.

Domestic use of barley in the 1989/90 crop year, 355 million bushels, is forecast up slightly from a year earlier. In comparison, food, alcohol, and seed plus feed and residual disappearance peaked in 1985/86 at 497 million bushels, based entirely on what remains a record feed and residual level.

Total use is forecast at about 15 million bushels above 1988/89's 425 million bushels because exports are expected to be up slightly to 85 million bushels. Sluggish sales in the waning months of the year have lowered the export forecast. Expected sales to Saudi Arabia under an Export Enhancement Program (EEP) initiative have not materialized. Exports remain far below the 1986/87 peak of 134 million when there were very large EEP sales, especially to Saudi Arabia. As of the end of March, accumulated exports of barley were placed at over 71 million bushels, up 23 percent from the same time a year earlier. Saudi Arabia continues to be our largest customer, although their imports are down more than a fourth from last year.

Ending stocks for the 1989/90 crop year are forecast at only 170 million bushels, down 13 percent from the previous year. This is the lowest ending stock level since the 1981/82 crop year. The expected stocks-to-use ratio of 39 percent this year is down from 1988/89's 46 percent, and is the lowest since 1983/84. March 1 barley stocks were reported at 253 million bushels, almost 100 million lower than December 1 inventories. During the December-February quarter, total use exceeded 100 million bushels, bolstered by a three-fold increase in feed and residual use.

As of May 16, almost 24 million bushels (about 6 percent of domestic production) had been placed under loan, nearly the same amount as a year earlier for the 1988 crop. Both years are in marked contrast to other late 1980's crops when lower prices added incentive to take advantage of the commodity loan program. Continued strong prices have resulted in the redemption of outstanding loans, with the 1989 barley picture looking much like that of a year earlier. Less than 10 million bushels were outstanding by early May, as was the

case in 1988. In 1987, however, 97.9 million were outstanding. Ending FOR barley stocks were about 1 million on May 1. These FOR reserves have fallen dramatically in the last 3 years. No barley has been allowed to enter the FOR since the 1985 crop year, and much of it qualified as malting barley and was drawn out in response to attractive prices.

The preliminary marketing year weighted average price for barley for the 1989/90 crop year was \$2.40, down 40 cents from the 1988/89 crop, but 59 cents above the 1987/88 level. The loan rate for the 1989 crop is \$1.34 per bushel. Through March 1990, feed barley prices in Duluth averaged \$1.99 per bushel. Although this was down about 40 cents from the same time last year, it was well above the loan rate. The combination of high market prices and a low loan rate created an atmosphere ripe for low loan activity.

With North Dakota, South Dakota, and Minnesota malting barley crops particularly hard hit by hot, dry weather 2 years ago, the spread between malting barley and feed barley prices had widened dramatically to over \$2.00 per bushel in the late summer of 1988. In the following year, the gap dwindled somewhat, but remained large. Through the first 10 months of this crop year, malting barley prices averaged over \$1.00 higher than feed barley, and in March the difference was 57 cents. Much of this narrowing was due to increased supplies of malting barley. As a result, the ratio of prices in recent months between feed barley and corn appears to be nearing the long-term average.

Barley Planting Intentions Down in 1990

USDA's *Prospective Plantings* report indicated a barley planted area of 8.888 million acres for the 1990 crop. This figure is usually a good indicator of actual plantings later in the year. Last year, 9.175 million acres were planted. Planting intentions on a State-by-State basis show some variation. North Dakota's intended area, about one-third of the Nation's total, is unchanged from last year's 2.8 million acres. Montana has the second most acres, and is likewise unchanged, 1.7 million. Minnesota's absolute gain was the largest at 75,000 acres, placing it with North Dakota and Montana as the only States with an expected barley area of 1 million acres or more.

Participation in the barley program fell slightly to 66 percent in 1990/91, compared to 67 percent in the previous year. Both base acres and enrolled acres registered declines.

1990/91 Barley Crop Forecast

The initial 1990 barley production forecast published in May was 415 million bushels, up 3 percent from the 1989/90 crop; and up 43 percent from the drought-ravaged crop of 1988/89—despite the fact that about 1 million fewer acres will be planted in 1990 than in 1988.

Barley supplies, forecast at 595 million bushels in 1990/91, are projected slightly lower than the previous year. Feed and residual use is projected at 175 million bushels, the same as forecast for 1989/90, and up slightly from the previous year. Food, seed, and industrial uses are projected at 185 million bushels, 5 million more than last year. Exports are projected to remain steady at 85 million bushels. Thus, total disappearance is estimated at 445 million bushels, up 5 million from 1989/90's forecast use. With supply forecast down 15 million bushels, ending stocks are projected to decline 20 million to 150 million bushels. The ending stocks-to-use ratio would be 33.7, compared with 38.6 for 1989/90. Barley prices are expected to average slightly higher in 1990/91. Although the spread between malting barley and feed barley prices likely will average lower, potentially higher corn prices will strengthen feed barley prices slightly.

Oats Situation

Oats supply in 1989/90 rebounded to 537 million bushels, an increase of 37 percent from the 1988/89 drought-reduced level. More than offsetting extremely low beginning stocks of only 98 million bushels (the lowest on record) was a harvested crop of 374 million bushels, 72 percent higher than 1988/89. Imports are forecast to be about the same as a year earlier.

Total oats use in 1989/90 is forecast at 416 million bushels, an increase of 41 percent from the previous year. Greater oats availability and lower prices have boosted feed and residual use to 55 percent above 1988/89 to a forecast 300 million bushels. It is expected, however, to remain well below the 1987/88 level of 358 million bushels. The feed use of oats has trended sharply downward for many years; the 1989/90 estimate of feed and residual uses falls close to the trend line, with the 1988/89 number well below it.

FSI use for 1989/90 is forecast to rise 15 percent to 115 million bushels, the highest since 1962. Release of reports in the spring of 1988 citing oat bran as reducing serum cholesterol led to a rapid development of a market for oat bran products. The market growth seems to have slowed somewhat perhaps because of a subsequent report questioning the effectiveness of oat bran.

Oats ending stocks are expected to reach around 120 million bushels, an increase of a fourth from 1988/89. In recent years, oats ending inventories have trended down and from 1980-1987 averaged 160 million bushels.

The preliminary marketing-year weighted average oats price is \$1.48 per bushel, down sharply from the 1988/89 level of \$2.61 and slightly below the 1987/88 level. Through the first 9 months of the crop year, the ratio of prices of oats to corn approached the feed ratio of relative feed energy values for the crops, and averaged under 0.59, closer to its feed value relationship and down from about 1.00 in 1988/89.

Oats Planting Intentions Down

USDA reports oats producers expect to seed 11.0 million acres for harvest during 1990, down about 9 percent from the actual planted area a year earlier. The oats harvested-for-grain acreage is estimated at 6.35 million acres, down 8 percent. Oats continue to be sown and used as a cover crop, causing the harvested area to fluctuate substantially. Of the area planted to oats in 1990, Texas is forecast to harvest a greater proportion than last year, Iowa and Minnesota less.

In 1989, oats planting intentions were reported at 13.2 million acres, with the actual coming in at 12.1 million. This "distance" has shrunk somewhat in recent years—in 1987 and 1988 it was over 2 million acres, with the final above intentions in 1987 and below in 1988.

Of the five largest oats States (in terms of harvested area), plantings are expected to increase in Wisconsin (up 6 percent to 750,000 acres) and North Dakota (up 15 percent to 750,000). In Iowa, the largest planted State, the harvested oats area is likely to fall by 13 percent, and reach only 650,000 acres. The State typically harvests less than one-half the planted area. Minnesota and South Dakota (normally the greatest producing State) show harvested area declines of 16 and 14 percent, respectively.

Participation in the oats program has fallen dramatically in recent years as market prices have made it economically attractive to remain outside the program requirements. For the 1990/91 season, participation has fallen to 10 percent.

1990/91 Oats Supply and Demand Estimates

The total supply of oats in 1990/91 is projected at 537 million bushels, virtually the same as a year earlier. Oats supplies in 1990/91, will be bolstered by beginning stocks of 122 million bushels, 24 percent larger than 1989/90 and oats imports of 65 million bushels. In 1990/91, a possible combination of improved yields and reduction in harvested area translate into production of 350 million bushels, down 6 percent from the 1989/90 level. While larger than the drought-reduced 1988 crop, it is still an historically small oats crop. Production averaged almost 440 million bushels during the 1980's, but declined from 520 million in 1980-1982 to about 320 in 1987-1989. In the 1950's, when yields were only about 36 bushels per acre, production averaged almost 1.3 billion bushels, illustrating the changes in oats production and use during the past 30-40 years. In recent years, oats yields have centered around 54 bushels per acre.

Subsurface soil moisture deficits among major grain producing States are most severe in North Dakota, the Nation's second largest oats State in terms of projected 1990 harvested area (South Dakota ranks number one). Generally sufficient topsoil moisture exists in general throughout the area for proper germination. However, timely rain during the grow-

ing season will be required for the crop to thrive and supplies to remain adequate.

The total use for oats in 1990/91 is projected to be 421 million bushels, 5 million more than the previous year, and 127 million larger than 1988/89. FSI use is expected to be 120 million bushels, 5 million and 20 million bushels over the 2 previous years. Feed and residual use is projected at 300 million bushels, the same as a year earlier, but well below the 395-million-bushel average of the 1980's.

Weighted average marketing year prices fell in line with traditional values in 1989/90, and are projected at \$1.30-1.70 per bushel in 1990/91.

Hay Situation

Hay production for the 1989/90 crop year (May 1 to April 30) was 15 percent above the drought-reduced level of 1988/89, and totaled 145.4 million short tons. Nonetheless, production remained almost 4 million tons below the average of the 6 years prior to the drought.

May 1 hay stocks, as reported in the USDA *Crop Production* report, amounted to 27.1 million short tons, up almost 55 percent from last year's figure. Disappearance during the December 1 through April 30 period was 74.1 million tons, compared to 72.8 million during the same period a year ago, an increase of less than 2 percent. For the entire 1989/90 crop year, disappearance was 135.9 million tons, up slightly from 135.6 million in 1988/89.

The number of roughage-consuming animal units (RCAU's) for the September-August 1989/90 feed year is forecast at 76.3 million, virtually the same as in the previous 2 years. Over 70 percent of the total are beef cattle other than those on feed, estimated at 53.9 million units, down marginally from a year earlier. Consumption per RCAU in 1989/90 was about 1.83 tons, up slightly from 1.78 tons per unit in 1988/89.

Hay prices received by farmers have remained high. For 1989/90, they averaged under \$88 per ton, somewhat above the previous year, and well above the 1980-1987 average of \$68.60 per ton. Alfalfa prices, \$94.60 per ton for the 1989/90 crop year, continued to be significantly higher than other hay prices which were \$66.10. The gap between the two this year was wider than in 1988/89.

The USDA *Prospective Plantings* report in March indicated a harvested area for hay for 1990 of just over 62.0 million acres, continuing a decline of recent years. In the 2 previous years, the harvested area figures were 63.4 million and 65.1 million, respectively.

In the May *Crop Production* report, pasture and range feed conditions were published for the first time this year, and

showed significant improvement over a year earlier. With a rating of 76, pastures and ranges are still considered in the poor-to-fair category (as was last year's 68), but are clearly on the high end of the range. Ratings of 80 and above are considered good to excellent. North Dakota, still suffering from a lack of subsoil moisture, has the lowest rating of only 38, severe drought, below a year earlier.

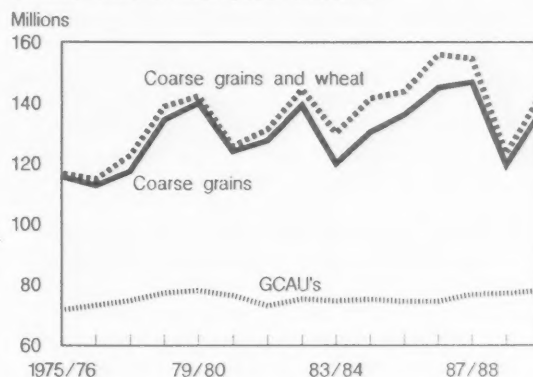
If the actual harvested acreage matches that intended for harvest, and assuming average yields of the last 5 years (excluding the high and low), hay production will total 153 million tons. With carryin stocks of 27.1 million tons, total supplies would reach about 180 million for 1990/91. This would be about 13 million tons larger than 1989/90, but still low in comparison to other years of the 1980's. With a small increase in the RCAU's likely during the year, consumption per unit is likely to increase.

Feed Demand

Feed and residual use of the four feed grains plus wheat in 1989/90 is expected to be 18 percent above the 123 million metric tons used in 1988/89. Higher prices associated with the 1988 drought-reduced crop limited disappearance, which was counted as feed and residual. With lower prices for the 1989 crops, pipeline supplies were likely larger, increasing feed and residual disappearance.

Feed and residual use of corn for September 1989 through February 1990 increased 14.6 percent from a year earlier. The feed and residual use of corn for September-November 1989 was 11 percent above a year previous and in December-February was up 19 percent. However, feed and residual use for December 1988 through February 1989 was down from both the year-earlier level and the prior quarter. In many years, the second quarter use exceeds the first quarter disappearance.

Figure 2
Feed and Residual Use for Coarse Grains and Wheat plus GCAU's



Grains are in million metric tons and GCAU's are in million units.

During January-March 1990, the number of dairy cows averaged 32,000 head less than a year ago. Milk per cow during the quarter was up nearly 2 percent, resulting in a 1-percent increase in production. On April 1, producers reported feeding 18.1 pounds of concentrates per cow, up from 17.7 pounds a year earlier. Strong milk prices plus a decline in value of concentrates fed provided an incentive to increase concentrate feeding and thus, milk per cow. Milk prices are still above the year-earlier level but have been declining from the December 1989 high. The declining milk prices may slow increases in concentrate feeding if grain prices continue to strengthen. Unlike 1989/90 when hay quality was low in some areas, a more normal spring could result in higher quality and lower priced alfalfa hay.

The number of cattle on feed in 13 major feeding States on April 1, 1990, was up 1 percent from a year earlier. January through March cattle placed on feed and marketings were below year-earlier levels. The marketing rate of cattle from feedlots has slowed because of the placement of lightweight cattle last fall and winter. Commercial beef production is expected to be up 1 percent in the second calendar quarter from a year ago, and about 2 percent in the third quarter. The number of cattle on feed probably will remain above the year-earlier level during the remainder of the 1989/90 feed year and should support a higher level of demand for feed.

Feed demand from the pork sector is below last year because of the 2.5-percent decline from a year earlier in the June-November 1989 pig crop and a 4-percent decline in the December 1989-February 1990 pig crop. In addition, producers intend to reduce the number of sows farrowing in March-May and June-August 1990 from the previous year. Sharply higher hog prices have improved returns to pork producers, and they may decide to change their intentions, especially in June-August. Even if they change farrowing intentions, it will have more impact on 1990/91 feed demand than this year.

The poultry sector is expected to continue needing additional supplies of feed to support increased numbers of broilers, turkeys, and eggs in the remainder of the feed year. Total egg production October 1989 through March 1990 was down from a year earlier because of fewer hens and eggs per layer. However, the number of layers in the hatching egg flock was likely up from a year earlier to support increased broiler hatchings. Forecasts are for increased egg production from last year through the rest of the feed year. Thus, feed demand by layers will likely increase.

Broiler production continues to increase and estimated net returns are favorable which are expected to further increase output. For all of 1990, broiler production is forecast to be up around 7 percent. Turkey producers had favorable returns in the fourth quarter of 1989, their major marketing period for whole birds. Even though returns have been dis-

couraging in 1990, producers have continued to increase poult placements. Forecasts are for 1990 turkey production to be 7 percent greater than in 1989. Thus, feed demand from the broiler and turkey sectors will still be increasing.

Food, Seed, and Industrial Use of Corn

FSI use of corn from September 1989 through February 1990 rose nearly 3 percent from the corresponding period a year earlier. FSI use is expected to increase slightly over 1 percent in the remainder of the marketing year from a year earlier.

In the first half, sweetener production (high fructose corn syrup (HFCS), glucose and dextrose) has been up nearly 2 percent from last year. If the usual seasonal patterns prevail, corn sweetener production will expand even faster in the second half. Corn sweetener production in March-August is forecast to be 6 percent above last year. In March-August 1989, HFCS production was nearly 1 percent below a year earlier, with all of the decline occurring in July and August. The cool, wet weather in some sections of the United States may have reduced demand for soft drinks, a major user of HFCS. To achieve the expected increase, normal weather will be needed to stimulate soft drink sales and diet drinks will need to maintain their past market shares. A major shift to diet soft drinks could decrease the demand for HFCS.

Midwest prices for 42-percent HFCS began climbing in late March 1989 and peaked at 16.29 cents per pound from late July through September. Prices then declined to 12.46 cents per pound from October through March before rising again to over 14 cents in April. If demand for corn sweeteners in the remainder of 1989/90 has its normal seasonal increase, prices may peak at 16 to 17 cents per pound.

Figure 3
Wet Milling Corn Cost

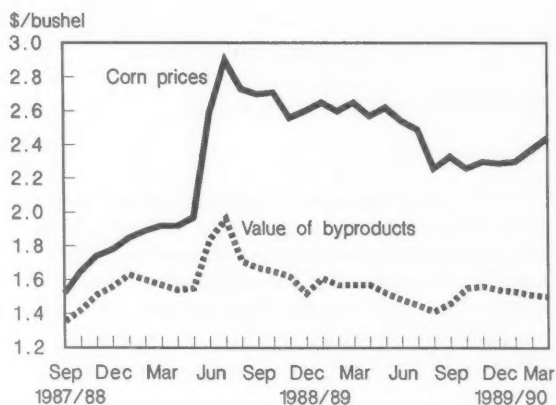


Table 2--Corn: Food, seed, and industrial use 1/

Year beginning September 1	Wet-milled products				Dry-milled alcohol	Dry-milled and alkaline cooked products	Seed	Total
	HFCS	Glucose and dextrose	Starch	Alcohol				
Million bushels								
1975	45	162	116	5	20	154	20	522
1976	62	164	116	10	15	155	20	542
1977	80	170	124	10	20	158	20	582
1978	105	170	124	15	20	155	20	609
1979	127	170	120	25	20	158	20	640
1980	165	183	120	35	35	160	20	718
1981	185	183	130	83	35	162	19	797
1982	215	188	127	130	50	170	15	895
1983	256	189	147	150	50	164	19	975
1984	310	187	143	170	100	160	21	1,091
1985	328	188	152	185	127	161	19	1,160
1986	339	185	155	200	135	161	16	1,191
1987	359	187	167	200	136	163	17	1,229
1988	362	190	164	210	139	161	19	1,245
1989	380	195	165	220	140	161	19	1,280

1/ Data are estimates based on production and sales figures from Government and private industry.

Ethanol production is expected to be about the same as last year. Blend sales of gasoline and ethanol from September through December (the most recent data available) were down 15 percent from a year previous. Some gasoline companies have discontinued blending ethanol with gasoline. And major refiners have been able to meet most locally mandated oxygen requirements by using methyl tertiary butyl ether (MTBE) which, unlike ethanol, can be added at the refinery and shipped in the usual manner. Offsetting the domestic decline has been the sale of ethanol to Brazil. Brazil has purchased 115 million gallons to be shipped this year for their alcohol fuel program.

A possibility exists for increased ethanol use in the future as the feed stock for ethyl tertiary butyl ether (ETBE). The ethanol blenders' tax credit has been extended to this product since it is made from ethanol. Current producers of MTBE could convert to ETBE. Production shifts between ETBE and MTBE will depend on the relative prices of ethanol and methanol. New oxygenated fuel mandates proposed in Clear Air Act amendments also would increase ethanol use.

Transportation Outlook

Normal Demand Conditions Return

Overall Situation

The U.S. transportation system returned to more normal operations as navigation conditions improved on the Mississippi River system and exports of grain and soybean declined from January's peak. Total domestic consumption and exports of grains and soybeans are projected at 360.01 million metric tons for 1989/90, up 7.5 percent from the prior year, but 3 percent below 1987/88.

Generally adequate transportation services are expected to be available for the remainder of the crop year. However, dif-

ficult navigation conditions are likely to recur this fall on the Mississippi River between St. Louis and Memphis as projected low water flows from the Missouri into the Mississippi. The U.S. Corps of Engineers has again announced a shortened navigation season on the Missouri, as in 1989. This promises to increase the cost of grain marketing for firms relying on the Missouri River, but does not markedly decrease the total distribution system's ability to respond to sudden increases in demand for grains and oilseeds.

Rail Situation

In March 1990, average rail car loadings of grain and soybeans fell 10 percent from January's high to 29,500 cars per week, a quantity easily supplied by railroads. In April, loadings fell to 27,900 cars per week. In April 1989, they averaged 30,180. The squeeze on rail service appears to have ended and is not expected to return during the remainder of the 1989/90 crop year.

Figure 4

River Stages at St. Louis

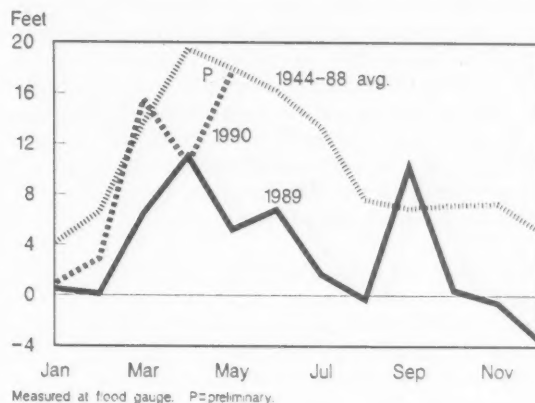


Figure 5

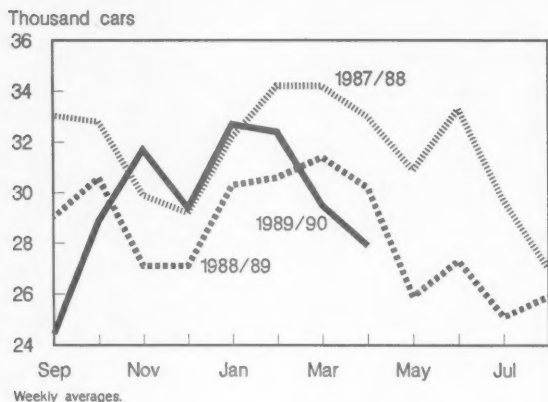
Rail Car Loadings of Grain and Soybeans

Figure 6

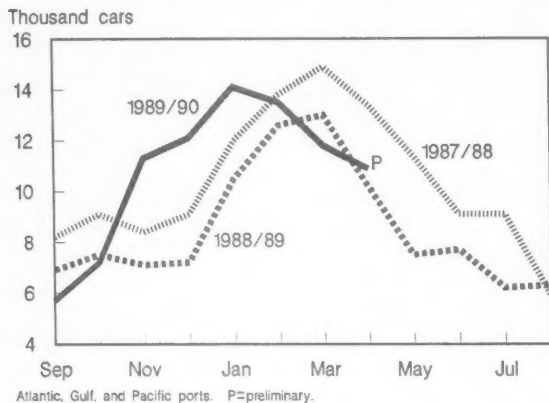
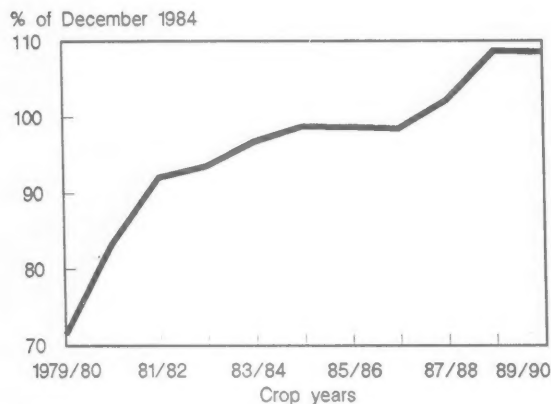
Rail: Weekly Average Grain Unloadings

Figure 7

Rail Rate Index for Grain

Additionally, some increase in the supply of covered hopper cars is in view. The Burlington Northern Railroad has announced that it will add, commencing in June, 60 new covered hopper cars each week to a total of 1,000 cars. And CSX is asking its shippers to forecast their car needs 14 days in advance to allow the railroad, with the aid of a computerized program, to place cars when and where needed. Some short-term rail car shortfalls are expected, however, as the hard red winter wheat crop is harvested.

Rail deliveries of grain to export points in March 1990 declined 16 percent from January and in April dropped an additional 8 percent to 10,882 cars per week, but continued to account for a disproportionate quantity of car days. In March and April, deliveries to ports account for about 40 percent of all rail grain shipments, down slightly from 43 percent in January. During 1988/89, deliveries of grain to ports by rail averaged 30 percent of all rail grain shipments.

The April decline was sharpest at North Atlantic ports, 79 percent below January. Rail deliveries of grain at Pacific Coast ports in March fell 9 percent from January and accounted for nearly 17 percent of all grain rail loadings. In April, deliveries rose 24 percent above January to a 1989/90 high of 6,834 cars per week, 24 percent of total rail grain loadings. Shipments of grain to Pacific Coast ports require a relatively large number of car days compared to North Atlantic ports. Total rail deliveries of grain for export, however, fell slightly to 39 percent of total grain loadings.

Rail rates appear to have increased only slightly during the November 1989-February 1990 period. In November, the Bureau of Labor Statistics' index of rail grain rates stood at 108.7 (Dec. 1984=100) and by April had risen 1.5 percent to 110.3. The April index shows an increase of only 1.8 percent since September 1989. In contrast, rates in crop year 1988/89 averaged 6.4 percent above 1987/88. These modest increases reflect declining railroad operating costs, as adjusted for productivity increases, over the past 12 months. For the second quarter of 1990, the Interstate Commerce Commission projects adjusted costs to be 0.2 percent below the first quarter and no widespread increases in grain rates are likely through August.

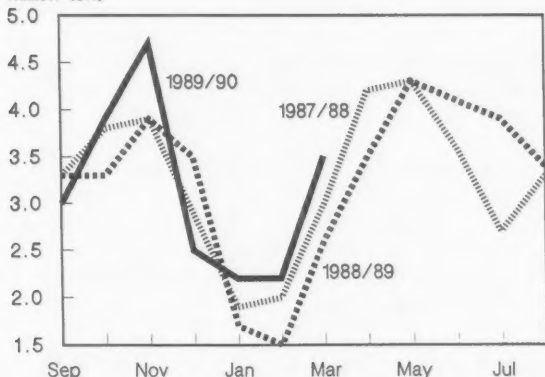
Barge Situation

With the upper Mississippi River reopening in mid-March and navigation below St. Louis near normal, the system returned to its dominant role in transporting feed grains for export. During January-April 1990, corn accounted for 83 percent of the downstream traffic on the Mississippi. In March, 3.5 million tons of grain and oilseeds, a 59-percent increase over February, were shipped on the combined Illinois and Mississippi River systems. During April, grain volume rose 28 percent to 4.5 million tons, a near record for 1989/90. This volume is 28 percent greater than in April 1989 and 36 percent above the 1988/89 average.

Figure 8

Grain Shipments on the Mississippi River and Illinois Waterway

Million tons



Near-normal navigation conditions are expected for the remainder of 1989/90. In March, the river stages at St. Louis averaged 138 percent above the same month of 1989 and 13 percent above the 1944-1988 average for March. In April, the water fell to slightly below 1989 levels. But during the first 3 weeks of May, spring rains in the Midwest caused it to average more than 200 percent above May 1989. Water levels are expected to fall throughout the remainder of the year. Even so, tow boat captains have become experienced with low water conditions, and the new Melvin Price lock and dam complex near Alton, IL is expected to greatly reduce the number and length of backups that have characterized the past two seasons.

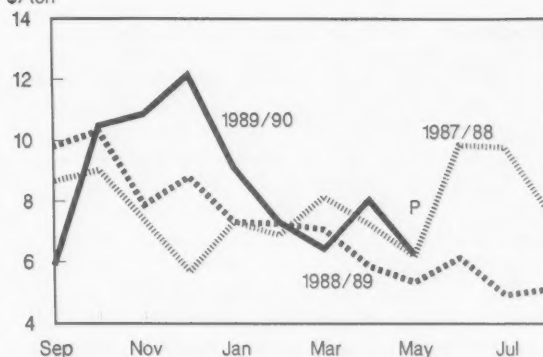
Longer run prospects are somewhat less favorable. In 1988, 60 to 80 percent of the total water flow at St. Louis came from the Missouri River. Between 40 and 60 percent of the flow came from the Missouri River reservoir system located in Montana and the Dakotas. Data for 1989 are not yet available, but about the same percentages are believed to have applied. In a normal year, runoff, chiefly from snow melt, would add 25 MAF (million acre feet) of water to the reservoirs each year. During 1987 to 1989, only 12.5 to 21.3 MAF were added annually. For 1990, 20.5 MAF were forecast, but it now appears that the actual runoff will be somewhat less. The Corps of Engineers estimates that 6 years of normal runoff will be required to raise the Missouri River reservoirs to full capacity.

To cope with less water in the Missouri, the Corps of Engineers plans to terminate the navigation season (the period in which they attempt to release enough water from the reservoirs to permit navigation) on November 1, 1990, and reduce the flow of water to about 82 percent of normal during the season. It seems likely that the flow from the Missouri River into the Mississippi will be no greater and possibly less than in 1989. Thus, navigation conditions on the Mississippi, between St. Louis and Cairo, IL, should remain adequate for 1989/90, but could deteriorate early in

Figure 9

Barge Rates to New Orleans

\$/ton



From Peoria, Ill. P=preliminary.

the fall. Low water might, therefore, be encountered well before the winter freeze.

Barge rates to New Orleans continued to fall through March from their December 1989 peaks of \$12.15 per ton at Peoria and \$7.05 at St. Louis. In March, rates from Peoria averaged \$6.43 per ton and \$4.92 at St. Louis, down 12 and 3 percent, respectively, from the prior month. In contrast, rates for March 1989 had averaged \$7.08 and \$5.40 per ton, respectively, 8 to 10 percent above March 1990.

In April, rates rose sharply in response to the 28-percent increase in grain volume. At Peoria, rates increased 25 percent to \$8.06 per ton, while at St. Louis the increase was only slightly smaller, 23 percent to \$6.04 per ton.

For the remainder of 1989/90, rates should remain at or below April levels unless one of the not infrequent export surges raises them.

World Coarse Grain Outlook

Global production of coarse grains is projected to rise nearly 3 percent to 820 million tons in 1990/91, led by a large gain in the United States. Coarse grain consumption is projected at 828 million tons, about the same as the forecast record for 1989/90. This would be the fourth consecutive year that global use exceeds production.

While foreign production is forecast to grow nearly 1 percent in 1990/91, foreign coarse grain use is expected to drop slightly. World trade is projected down about 4 percent, largely reflecting expectations of an increase in trade in feed quality wheat at the expense of coarse grains.^{1/} This

^{1/} All trade years referred to in this section are October-September and exclude intra-EC trade unless otherwise specified.

assessment is based on USDA's initial projections for the 1990/91 season. Changes in 1989/90 forecasts are still possible, with a few months remaining in the season.

Foreign Output Stable in 1989/90, Consumption Up

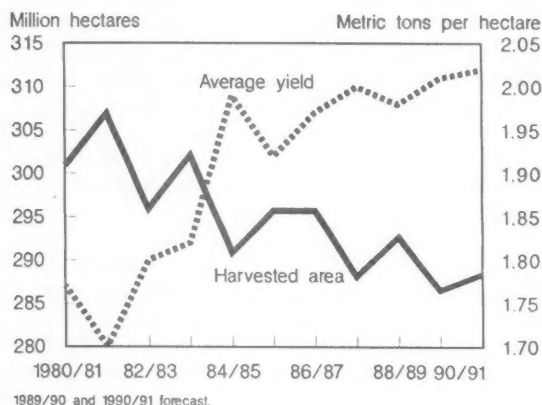
Foreign production of coarse grains in 1989/90 is estimated at 577 million tons, down marginally from the previous year. However, harvests in many Southern Hemisphere countries are not complete. Argentina's coarse grain production is expected up nearly 20 percent because of partial recovery from drought. The corn crop is forecast at 5.5 million tons, below earlier expectations after erratic weather in some areas caused losses. Brazil's corn harvest is forecast to drop about 6 percent, reflecting lower yields and a reduction in area. Output of corn in South Africa is expected to fall around 30 percent in 1989/90 from the bumper crop of the previous year, primarily due to more average yields.

In 1989/90, foreign consumption is forecast up 2 percent, mostly accounted for by large increases in the Soviet Union and Eastern Europe. In the Soviet Union, the increasing use of coarse grains stemmed from a larger domestic crop, as well as increased imports. In Eastern Europe, higher imports and reduced exports are also contributing to greater use in 1989/90, but most of the rise is due to larger production.

Small Gain in 1990/91 Foreign Production Projected

The outlook for foreign coarse grain production in 1990/91 is for a small increase in the aggregate, and relatively few large swings among individual countries. As a result of both higher average yields and area harvested, foreign output is projected at 582 million tons. This would marginally exceed the record reached in 1986/87.

Figure 10
Foreign Coarse Grain Area and Yield



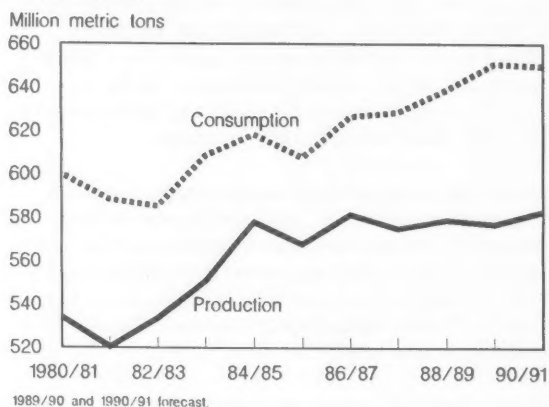
Since the mid-1980's, foreign production has been fairly flat. An upward trend in yields has offset a downtrend in coarse grain area. Although average foreign yields are expected to inch above the record estimated for 1989/90, the rate of growth has slowed in recent years. In contrast, foreign wheat yields grew at a faster pace during the 1980's. This probably reflects more irrigation, higher input use, and more attention to improving wheat varieties in many countries.

The largest increase in coarse grain production in 1990/91 is expected in China due to better corn yields and a slight rise in area. Small gains are likely for India, Argentina, Mexico, Eastern Europe, and Turkey. The forecast outturn for Turkey is still below average, and represents only a partial recovery from the previous year's drought.

Coarse grain production in the Soviet Union is projected at 106.5 million tons, about equal to the estimated 1989/90 outturn. Total Soviet grain production prospects are favorable due to excellent conditions for winter grains and good early prospects for improved spring crops. Total grain output is projected at 215 million tons, compared to 211.1 million in 1989/90.

A 2-percent decline in EC coarse grain production is expected primarily because of dry conditions limiting corn planting in France. Much of this prospective area is irrigated, but reservoir levels are low. A slight fall in EC barley production is also likely due to less area. EC wheat production is expected to rise, with prospects for the second largest harvest on record due to excellent conditions in major growing areas across Northern Europe.

Figure 11
Foreign Coarse Grain Production and Consumption



Small Drop in 1990/91 Foreign Consumption Likely

In 1990/91, foreign use of coarse grains is projected to drop less than 1 percent, but this would be the first decline since 1985/86. The key reason for this potential decline is an anticipated rise in foreign feeding of wheat, projected up about 6 million tons. More wheat feeding assumes more abundant wheat supplies, given a projected record world crop, and declining wheat prices relative to coarse grains. Significant increases in wheat feeding are expected in the Soviet Union, Eastern Europe, South Korea, and the EC.

Stagnant economic growth could constrain coarse grain consumption in a number of developing countries. For example, Brazil's new government has started an austerity program that may check meat demand and use of feed grains. Venezuela's economic adjustment program has led to a cutback in its poultry sector in recent months. Prospects for a marked recovery are uncertain. Egypt's poultry sector has also contracted in recent years, reflecting foreign exchange shortages that limit imports of corn for feed, exacerbated by higher corn prices in the last 2 years.

World Trade to Decline in 1990/91

World trade in 1989/90 is forecast at 99.5 million tons, the third highest on record. The largest import gains are taking place in Mexico, up 1.4 million tons; Turkey, up 1.1 million; and the Soviet Union, up 1 million tons. Imports are also up significantly in South Korea and Eastern Europe.

For the first time since 1984/85, the gap between foreign production and consumption could narrow in 1990/91, thus reducing the potential demand for imported coarse grains. Coarse grain trade is projected at 95 million tons in 1990/91, a decline of 4 percent. Preliminary projections point to about 4 million tons of trade in feed quality wheat, which would account for the bulk of the decline. The EC is expected to supply most of this wheat, with likely markets in the USSR, South Korea, and Eastern Europe.

Once again, much of the uncertainty in the trade outlook originates with the Soviet Union. Despite potential for a larger grain crop, the Soviets are expected to continue heavy imports to meet the growing demand for livestock products. Programs aimed at increasing State grain procurements, currently inadequate, are not expected to have a dramatic impact in the near future.

Soviet coarse grain imports are projected at about 21 million tons in 1990/91 (October-September), down 2.6 million tons from the forecast level for 1989/90. Corn is forecast to make up nearly 80 percent of 1990/91 coarse grain imports, with most of the balance consisting of barley, similar to the mix of 1989/90. The Soviets are also expected to purchase some

feed quality wheat in 1990/91 and total wheat imports are projected up 1 million tons. Relative prices and the availability of financing will influence the actual mix of grains imported. In recent months, there has been some concern about delayed payments for Soviet grain purchases and growing credit needs.

Larger harvests are expected to cut import needs in Turkey, Mexico, and Eastern Europe in 1990/91. For the latter, lower amounts of food aid are also anticipated. Mexico's feed grain demand will also be influenced by the progress of economic reforms and possible policy changes, such as changes in consumer subsidies. If Soviet imports slip, Japan may reemerge as the largest coarse grain buyer in 1990/91, with 21.6 million tons projected. This is little changed from the previous 2 years because higher meat imports have cut potential growth in Japan's feed grain use.

U.S. Market Share to Remain High

U.S. coarse grain exports are forecast at 67.2 million tons in 1989/90, the highest since 1980/81 and third largest on record. This would give the United States a 68-percent share of the world market, second only to 72 percent in 1979/80. The Soviet Union will be the largest market, followed by Japan. U.S. sales of corn to many countries, including Mexico, Taiwan, and South Korea, are running well above last year.

In 1990/91, U.S. exports are projected to decline 4 percent to 64.5 million tons. However, this would imply no change in the U.S. market share as competitor exports also fall. All of the drop in U.S. exports would occur in corn, with no change in sorghum and barley. Competitor exports of corn and barley exports are projected down in 1990/91, but competitor sorghum exports are expected to rise.

U.S. dominance of the corn market has increased in recent years. South Africa's exports are forecast up in 1989/90 because an upward spike in 1988/89 production—related to weather—temporarily increased exportable supplies. However, the trend in South Africa's corn area is down, reflecting policies to reduce subsidy expenditures on exports. For 1990/91, no significant change is expected in South African production, but exports will drop with lower carryover stocks.

Exports by Argentina have fallen in recent years due to loss of corn area to oilseeds and weather problems. Argentina's exports would have fallen further, but a severe economic crisis has curbed internal demand. Exports in 1990/91 are projected to increase 1 million tons, based on an assumed rise in production. The slippage in Argentina's corn area may have bottomed out. A declining trend in Thailand's corn exports reflects strong growth in domestic feed use, and another slight drop is projected in Thailand's 1990/91 shipments.

Table 3--World coarse grain trade: Major exporters and importers by commodity, 1986/87-1990/91 1/

Item	1986/87	1987/88	1988/89	1989/90 2/	1990/91 3/
Million metric tons					
CORN					
Exporters:					
U.S.	39.4	44.5	51.3	58.7	56.0
Argentina	4.0	3.7	2.5	2.5	3.5
China	3.8	4.1	3.7	2.5	2.5
Thailand	2.6	0.7	1.4	1.1	1.0
South Africa	2.6	0.8	2.0	3.2	1.5
Others	4.1	3.1	2.8	3.6	3.6
Total	56.4	56.7	63.8	71.8	68.1
Importers:					
Japan	16.1	16.7	15.9	16.5	16.5
USSR	7.6	7.9	17.9	18.5	16.5
EC-12	2.9	3.7	2.4	2.5	2.5
Korea, Rep.	4.6	5.0	5.7	6.8	7.0
Taiwan	3.5	4.2	4.2	4.6	4.4
Mexico	3.4	3.2	3.2	4.6	4.0
China	1.6	0.2	0.0	0.5	0.2
East Europe	1.7	2.2	2.4	3.1	1.8
Brazil	1.4	0.0	0.2	0.1	0.1
Egypt	2.4	1.4	1.2	1.2	1.4
Others	11.2	12.3	10.7	13.4	13.7
Total	56.4	56.7	63.8	71.8	68.1
SORGHUM					
Exporters:					
U.S.	5.1	6.1	8.1	6.5	6.5
Argentina	1.0	1.2	0.7	0.8	1.0
Australia	0.6	0.6	0.3	0.2	0.3
Others	1.1	0.5	1.7	0.5	0.5
Total	7.8	8.3	10.8	8.0	8.4
Importers:					
Japan	4.2	3.9	4.1	3.7	3.6
Mexico	0.8	0.9	2.3	2.2	2.2
Taiwan	0.8	0.3	0.1	0.2	0.2
Venezuela	0.8	1.7	1.0	0.1	0.2
Israel	0.2	0.4	0.4	0.4	0.4
USSR	0.1	0.0	1.2	0.3	0.4
Others	0.9	1.1	1.7	1.2	1.4
Total	7.8	8.3	10.8	8.0	8.4
BARLEY					
Exporters:					
EC-12	6.2	7.0	9.0	9.0	9.0
Canada	6.0	3.5	3.4	4.0	4.0
Australia	2.2	1.6	1.4	1.7	1.2
U.S.	3.0	2.9	1.7	2.0	2.0
Others	1.2	1.1	1.4	0.5	0.6
Total	18.6	16.1	16.9	17.2	16.8
Importers:					
Saudi Arabia	9.0	4.8	4.6	3.6	4.0
USSR	3.0	2.3	3.2	4.2	3.5
East Europe	1.3	1.6	2.2	1.9	1.8
Japan	1.2	1.3	1.3	1.2	1.2
Others	4.1	6.1	5.6	6.3	6.3
Total	18.6	16.1	16.9	17.2	16.8
COARSE GRAINS TOTAL TRADE	83.7	83.2	94.5	99.5	95.1

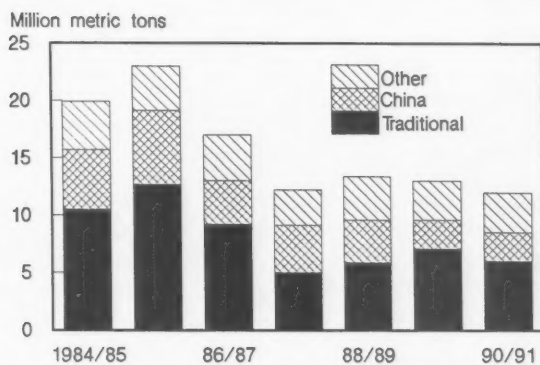
1/ October-September year, excludes intra-EC trade. Totals may not add because of rounding. 2/ Preliminary. 3/ Forecast.

China is expected to have a larger corn crop in 1990/91, but its exports are projected unchanged. Increases in domestic demand are anticipated, but transportation difficulties are likely to continue to hamper grain distribution. EC corn exports should drop in 1990/91 because of reduced production.

A small decline is likely in competitor barley shipments in 1990/91. Exports by the EC are expected at 9 million tons,

matching the forecast for 1989/90. The outlook for the EC's barley trade could be effected by potential increases in internal feeding of wheat, along with policy decisions such as the amount of export restitutions made available. Canada's 1990/91 barley exports may be the same as the volume forecast in 1989/90, 4 million tons. Australia's exports of barley are likely to decline 500,000 tons to 1.2 million in 1990/91 due to lower production.

Figure 12

Competitor Corn Exports**Global coarse grain stocks to fall again in 1990/91**

Supplies of coarse grains are projected to tighten again in 1990/91. World stocks are projected to fall slightly in 1990/91 to 107 million tons, the lowest quantity since 1975/76. Both foreign and U.S. ending stocks are likely to fall. This implies a world stocks-to-use ratio of 13 percent, which would be the lowest since 1973/74. The forecast ratio for 1989/90 is 13.9 percent.

In contrast, world wheat supplies are likely to increase somewhat and stocks should rise for the first time in 4 years. This would cause a small gain in total world grain stocks, not including rice.

Update on U.S.-Soviet Grain Agreement

The United States and the Soviet Union recently reached agreement in principle on a new Long Term Grain Agreement (LTA) to last 5 years, but it has not yet been signed. It calls for minimum annual purchase levels of 4 million tons of coarse grains, 4 million of wheat, and 2 million of either wheat, coarse grains, soybeans, or meal. One ton of soybeans or meal counts as 2 tons of grain toward the minimum. Some additional flexibility is allowed, so that in any one year the USSR can substitute up to 750,000 tons of one grain for another but at no time during the agreement can the total of wheat or coarse grains purchased in place of the other exceed 1.5 million tons.

The United States also raised the amount of grain that the Soviets can purchase without consultation in 1989/90 under the current extended LTA. This was the third such increase this year. The allowable limit is now 22 million tons, up from an original base of 12 million.

LIST OF TABLES

Table	Page
1. Corn supply, disappearance, and ending stocks December-February	5
2. Corn: Food, seed, and industrial use	11
3. Foreign coarse grains production: Selected countries and regions, 1986/87 - 1990/91	16
Appendix table	
1. Feed grains: Marketing year supply and disappearance, area, and price, 1984/85-1990/91	19
2. Foreign coarse grains: Supply and disappearance, 1980/81-1990/91	20
3. Corn: Marketing year supply and disappearance, area, and prices, 1984/85-1990/91	21
4. Sorghum: Marketing year supply and disappearance, area, and prices, 1984/85-1990/91	22
5. Barley: Marketing year supply and disappearance, area, and prices, 1984/85-1990/91	23
6. Oats: Marketing year supply and disappearance, area, and prices, 1984/85-1990/91	24
7. Corn: Quarterly supply and disappearance, specified periods, 1984/85-1990/91	25
8. Sorghum: Marketing year supply and disappearance, specified periods, 1983/84-1990/91	26
9. Barley: Quarterly supply and disappearance, specified periods, 1984/85-1990/91	27
10. Average prices received by farmers, United States, by month, and loan rate, 1982-1990	28
11. Cash prices at principal markets, 1985-1990	29
12. Feed-price ratios for livestock, poultry, and milk, by months, 1982-1990	30
13. Price trends, selected feeds, and corn products	31
14. Corn, sorghum, barley, and oats exports, 1987/88 to date	32
15. Corn, sorghum, barley, and oats imports, 1987/88 to date	33
16. Shipments of grain on the Illinois Waterway and the Mississippi River (Locks 11-22), 1981/82-1988/89	34
17. Barge rates for grain shipments to New Orleans, Louisiana	34
18. Weekly average of rail car loadings of grain and soybeans, 1979/80-1988/89	35
19. Rail freight rate index for grain, Crop year 1979 to 1988 (December 1984=100)	35
20. Hay (all): Acreage, supply, and disappearance, 1983/84-1990/91	36
21. Hay: Average prices received by farmers, United States by months, 1983/84-1990/91	36
22. Processed feeds: Quantity fed, 1987/88 to date	37

Appendix table 1--Feed grains: Marketing year supply and disappearance, a

Year 2/	Supply				Food, alcohol, and industrial
	Begin- ning stocks	Produc- tion	Imports	Total	
1984/85	39.6	236.8	0.7	277.1	31.4
1985/86	57.5	274.3	0.8	332.5	33.5
1986/87	126.4	251.6	0.7	378.7	34.2
1987/88	152.1	216.5	1.0	369.6	35.6
1988/89	133.6	149.3	1.2	284.2	36.3
1989/90 4/	65.9	221.1	1.2	288.2	37.3
1990/91 5/	46.0	237.3	1.2	284.5	----39.

	Area		
	Set-aside and diverted	Planted	Harvest for grain
	-----Million hectares-----		
1984/85	2.1	49.5	43.2
1985/86	2.9	51.8	45.2
1986/87	7.3	48.5	41.1
1987/88	12.5	43.1	35.2
1988/89	11.1	41.2	32.6
1989/90	6.6	43.0	36.9

1/ Aggregated data on corn, sorghum, barley, and oats. 2/ The marketing year ends June 1. 3/ Includes total Government loans (original and resale). 4/ Includes total Government loans (original and resale). 5/ Deficiency payments. 6/ Deficiency and diversion payments.

ce, area, and prices, 1984/85-1990/91 1/

d, and ial	Disappearance				Ending stocks				
	Domestic use	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	Privately owned 3/	Total
	Million metric tons								
	1.5	130.6	163.5	56.1	219.6	8.9	48.6	57.5	
	1.5	135.1	170.0	36.1	206.2	20.4	106.0	126.4	
	1.4	145.1	180.7	45.9	226.6	48.7	103.4	152.1	
	1.3	146.9	183.7	52.3	236.0	34.1	99.5	133.6	
	1.2	119.6	157.1	61.1	218.3	18.6	47.3	65.9	
	1.2	137.1	175.6	66.6	242.2	12.9	33.1	46.0	
---39.6---		139.0	178.5	64.1	242.6			41.9	

rvested for grain	Yield per harvested hectare	Index Average price received by farmers 6/	Government-support program Total payments to participants
	Metric tons	1977=100	\$ million
3.2	5.48	130	7/ 1,860
5.2	6.07	110	7/ 2,785
1.1	6.12	74	8/ 7,343
5.2	6.15	96	8/ 8,461
32.6	4.58	126	8/ 3,157
36.9	5.99	118	7/ 3,945

Marketing year for corn and sorghum begins September 1; for oats and
seal). 4/ Preliminary. 5/ Projected. 6/ Excludes support payments.

Appendix table 2--Foreign coarse grains: Supply and disappearance, 1980/81-1990/91 1/

Year	Beginning stocks	Production	Feed	Total Disappearance	Imports	Adjusted imports 2/	Ending stocks
Million metric tons							
Corn:							
1980/81	45.8	240.1	168.4	297.6	79.1	78.1	48.9
1981/82	48.9	235.1	175.9	291.0	77.6	67.3	43.8
1982/83	43.8	230.3	174.6	281.2	73.2	63.3	39.1
1983/84	39.1	241.4	167.7	288.5	64.9	61.1	39.8
1984/85	39.8	263.9	183.6	303.3	72.5	66.6	47.4
1985/86	47.4	253.8	185.7	290.9	62.1	54.5	41.2
1986/87	41.2	267.3	195.2	309.2	61.1	56.4	37.2
1987/88	37.2	266.8	195.3	309.5	62.7	56.7	38.0
1988/89	38.0	274.2	212.4	326.2	73.3	63.8	37.4
1989/90 3/	37.4	268.4	216.5	330.7	76.1	71.8	35.9
1990/91 4/	33.9	273.9	217.1	332.0	74.1	68.1	31.6
Sorghum:							
1980/81	6.9	44.6	23.3	50.8	12.8	14.1	8.1
1981/82	8.1	48.1	28.5	55.5	14.3	13.7	7.4
1982/83	7.4	44.0	25.2	50.5	12.3	11.6	6.1
1983/84	6.1	46.5	25.7	52.3	13.1	13.0	6.5
1984/85	6.5	44.0	26.1	52.1	12.9	13.1	6.0
1985/86	6.0	41.9	24.9	47.4	9.6	8.5	5.0
1986/87	5.0	40.6	23.3	46.4	8.1	7.8	4.2
1987/88	4.2	37.6	22.7	44.7	8.7	8.3	3.1
1988/89	3.1	40.7	24.5	47.6	11.0	10.8	4.1
1989/90 3/	4.1	40.0	22.5	47.1	8.5	8.0	3.3
1990/91 4/	3.3	40.6	22.4	47.3	8.2	8.4	3.0
Barley:							
1980/81	16.9	155.4	107.5	156.7	16.3	13.8	17.1
1981/82	17.1	144.9	105.4	149.6	20.4	13.9	14.4
1982/83	14.4	155.6	107.8	152.9	17.2	13.1	17.9
1983/84	17.9	153.6	115.4	160.4	20.3	16.4	12.9
1984/85	12.9	162.5	115.8	157.7	23.1	17.9	19.1
1985/86	19.1	165.1	120.2	161.9	22.2	18.2	22.6
1986/87	22.6	169.1	125.6	167.8	24.1	18.4	26.7
1987/88	26.7	169.2	126.9	173.1	20.7	15.8	25.2
1988/89	25.2	160.0	118.5	161.9	20.6	16.7	24.8
1989/90 3/	24.8	159.7	123.5	166.8	20.1	16.9	19.3
1990/91 4/	19.3	161.2	121.2	164.0	19.6	16.5	18.2
Total coarse grains: 5/							
1980/81	77.4	534.0	342.0	599.9	110.3	108.1	81.5
1981/82	81.5	520.3	351.7	588.3	114.5	97.5	72.8
1982/83	72.8	533.6	357.2	585.5	104.0	89.5	73.2
1983/84	73.2	550.9	364.5	608.8	100.2	92.8	70.8
1984/85	70.8	578.1	377.3	618.4	111.1	99.6	85.9
1985/86	85.9	567.9	386.8	607.9	95.8	82.3	81.2
1986/87	81.2	581.6	396.8	626.6	95.1	82.9	81.4
1987/88	81.4	575.1	397.0	628.5	94.1	82.1	79.1
1988/89	79.1	578.9	404.1	639.3	106.7	93.0	78.6
1989/90 3/	78.6	577.1	416.8	652.3	106.7	98.3	68.9
1990/91 4/	68.9	582.3	412.3	648.8	103.9	94.0	65.2

1/ Aggregated on basis of local marketing years, except for adjusted imports. 2/ Based on Oct./Sept. trade year and excludes intra-EC trade. 3/ Forecast. 4/ Projected. 5/ Includes oats, rye, millet, and mixed grains.

Source: Compiled from World Grain Situation and Outlook, Foreign Agricultural Service, and USDA data.

Appendix table 3--Corn: Marketing year supply and disappearance, area, and

Year beginning September 1	Supply				Food, alcohol, and industrial
	Begin- ning stocks	Produc- tion	Impors	Total	
1984/85	1,006.3	7,672.1	1.7	8,680.1	1,070.0
1985/86	1,648.2	8,875.5	9.9	10,533.6	1,140.0
1986/87	4,039.5	8,225.8	1.7	12,267.0	1,175.0
1987/88	4,881.7	7,131.3	3.4	12,016.4	1,212.0
1988/89	4,259.1	4,928.7	2.8	9,190.6	1,226.4
1989/90 2/	1,930.4	7,527.2	2.2	9,459.8	1,261.0
1990/91 3/	1,329.8	8,100.0	2.2	9,432.0	---1,315.0---

	Area			Yield per harvested acre	Receiv- by farmers
	Set-aside and diverted	Planted	Harvested for grain		
	-----Million acres-----			Bushels	
1984/85	3.9	80.5	71.9	106.7	2.63
1985/86	5.4	83.4	75.2	118.0	2.23
1986/87	14.3	76.6	68.9	119.4	1.50
1987/88	23.1	66.2	59.5	119.8	1.90
1988/89	20.5	67.7	58.3	84.6	2.50
1989/90	10.8	72.3	64.8	116.2	2.30-2

1/ Includes quantity under loan and farmer-owned reserve. 2/ Preliminary.
5/ Deficiency payments. 6/ Deficiency and diversion payments. 7/ Deficiency

and prices, 1984/85-1990/91

Disappearance						Ending stocks Aug. 31		
Domestic use						Govt. owned	Privately owned 1/	Total
Seed	Feed and residual	Total	Exports	Total disappearance				
Million bushels								
21.2	4,090.5	5,181.7	1,850.2	7,031.9	224.9	1,423.3	1,648.2	
19.5	4,107.3	5,266.8	1,227.3	6,494.1	545.7	3,493.8	4,039.5	
16.7	4,701.2	5,892.9	1,492.4	7,385.3	1,443.2	3,438.5	4,881.7	
17.2	4,811.7	6,040.9	1,716.4	7,757.3	835.0	3,424.1	4,259.1	
18.7	3,986.7	5,231.8	2,028.4	7,260.2	400.0	1,530.4	1,930.4	
19.0	4,550.0	5,830.0	2,300.0	8,130.0	300.0	1,029.8	1,329.8	
15.0----	4,650.0	5,965.0	2,200.0	8,165.0			1,267.0	

Average prices				Government-support program		
Received by farmers 4/	St. Louis No. 2 yellow	Omaha No. 2 yellow	Gulf Ports No. 2 yellow	National average loan rate	Target price	Total payments to participants
\$/bu.				\$ million		
2.63	2.81	2.65	3.00	2.55	3.03	5/ 1,654
2.23	2.37	2.25	2.52	2.55	3.03	5/ 2,479
1.50	1.68	1.53	1.83	1.92	3.03	6/ 6,327
1.94	2.19	1.98	2.38	1.82	3.03	6/ 7,388
2.54	2.73	2.49	2.93	1.77	2.93	7/ 3,687
30-2.40				1.65	2.84	

inary. 3/ Projected. 4/ Excludes support payments.
 efficiency, diversion, and disaster payments.

Appendix table 4--Sorghum: Marketing year supply and disappearance, area, and production

Year beginning September 1	Supply				Food, alcohol, and industrial	Domestic consumption and seed
	Begin- ning stocks	Produc- tion	Imports	Total		
						Million bushels
1984/85	287.4	866.2	0.1	1,153.7	15.3	2.0
1985/86	300.2	1,120.3	---	1,420.5	26.0	1.7
1986/87	551.0	938.9	---	1,489.9	10.4	1.6
1987/88	743.3	730.8	---	1,474.1	23.5	1.3
1988/89	662.7	576.7	---	1,239.4	20.5	1.5
1989/90 2/	439.5	617.9	---	1,057.4	13.5	1.5
1990/91 3/	267.0	685.0	---	952.0	---15.0---	

	Area			Yield per harvested acre	Received by farmers 4/
	Set-aside and diverted	Planted	Harvested for grain		
					Million acres
1984/85	0.6	17.3	15.4	56.4	4.14
1985/86	0.9	18.3	16.8	66.8	3.45
1986/87	2.7	15.3	13.9	67.7	2.45
1987/88	4.4	11.8	10.5	69.4	3.04
1988/89	3.9	10.3	9.0	63.8	4.05
1989/90	2.9	12.6	11.2	55.4	3.66-3.84

--- = Not applicable.

1/ Includes quantity under loan and farmer-owned reserve. 2/ Preliminary. 3/ Deficiency payments. 4/ Deficiency and diversion payments. 5/ Deficiency, 6/ Deficiency and diversion payments. 7/ Deficiency,

and prices, 1984/85-1990/91

Disappearance				Ending stocks Aug. 31			
Domestic use	Seed	Total	Exports	Total disappearance	Govt. owned	Privately owned 1/	Total
Feed and residual							
million bushels							
2.0	539.3	556.6	296.9	853.5	112.1	188.1	300.2
1.7	663.8	691.5	178.0	869.5	207.2	343.8	551.0
1.6	536.3	548.3	198.3	746.6	409.0	334.3	743.3
1.3	555.3	580.1	231.3	811.4	463.6	199.1	662.7
1.5	468.0	490.0	309.9	799.9	340.9	98.6	439.5
1.5	525.4	540.4	250.0	790.4	190.0	77.0	267.0
--	500.0	515.0	250.0	765.0			187.0

Average prices				Government-support program		
Domestic use	Kansas City No. 2 yellow	Texas No. 2 yellow	Gulf Ports No. 2 yellow	National average loan rate	Target price	Total payments to participants
\$/cwt.				\$ million		

4	4.46	5.04	4.90	4.32	5.14	5/ 158
5	3.72	4.32	4.07	4.32	5.14	5/ 227
5	2.73	3.24	3.22	3.25	5.14	6/ 570
4	3.40	3.81	3.96	3.11	5.14	6/ 709
5	4.17	4.66	4.81	3.00	4.96	7/ 349
3.84						

y. 3/ Projected. 4/ Excludes support payments.
ncy, diversion and disaster payments.

Appendix table 5--Barley: Marketing year supply and disappearance, area,

Year beginning June 1	Supply				Food, alcohol, and industrial
	Begin- ning stocks	Produc- tion	Imports	Total	
1984/85	189.4	598.0	7.4	794.8	149.0
1985/86	247.4	590.2	6.2	843.8	147.2
1986/87	327.2	608.5	6.6	942.3	156.1
1987/88	336.3	521.5	11.3	869.1	158.3
1988/89	321.1	290	10.5	621.6	164.7
1989/90 2/	196.4	403.4	11.5	611.3	165.4
1990/91 3/	170.0	415.0	10.0	595.0	---185.3

	Area			Yield per harvested acre	Rece- b farme
	Set-aside and diverted	Planted	Harvested for grain		
	-----Million acres-----			Bushels	---
1984/85	0.5	12.0	11.2	53.4	2.1
1985/86	0.7	13.2	11.6	51.0	1.8
1986/87	2.0	13.1	12.0	50.8	1.8
1987/88	2.9	11.0	10.0	52.4	1.8
1988/89	2.8	9.8	7.6	38.0	2.1
1989/90	2.3	9.2	8.3	48.6	2.1

1/ Includes quantity under loan and farmer-owned reserve. 2/ Preliminary

area, and prices, 1984/85-1990/91

Year and trial	Disappearance					Ending stocks May 31		
	Domestic use			Exports	Total disappearance	Govt. owned	Privately owned 1/	Total
	Seed	Feed and residual	Total					
Million bushels								
0	21.4	305.4	475.8	71.6	547.4	15.6	231.8	247.4
2	21.3	328.4	496.9	19.7	516.6	57.4	269.8	327.2
1	17.9	298.4	472.4	133.6	606.0	75.5	260.8	336.3
3	15.7	253.1	427.1	120.9	548.0	50.1	271.0	321.1
7	15.0	166.2	345.9	79.3	425.2	30.4	166.0	196.4
4	14.4	176.5	356.3	85.0	441.3	20.0	150.0	170.0
-185.0---		175.0	360.0	85.0	445.0			150.0

Received by farmers 4/	Average prices		Portland No. 2	Government-support program		
	Minneapolis			National average loan rate	Target price	Total payments to participants
	No. 2 or better feed 5/	No. 3 or better malting				
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liminary. 3/ Projected. 4/ Excludes support payments. 5/ Starting

Appendix table 6--Oats: Marketing year supply and disappearance, area, and

Year beginning June 1	Supply				Food, alcohol, and industrial
	Begin- ning stocks	Produc- tion	Imports	Total	
1984/85	180.9	473.7	33.6	688.2	41.0
1985/86	179.9	518.5	27.2	725.6	44.0
1986/87	183.7	385.0	32.4	601.1	45.0
1987/88	132.7	373.7	45.7	552.2	49.8
1988/89	112.0	217.6	62.9	392.5	72.7
1989/90 2/	98.3	373.8	65.0	537.1	88.6
1990/91 3/	121.5	350.0	65.0	536.5	---120.0

	Area			Yield per harvested acre	Receive by farmers
	Set-aside and diverted	Planted	Harvested for grain		
	-----Million acres-----			Bushels	
1984/85	0.1	12.4	8.2	58.0	1.69
1985/86	0.1	13.3	8.2	63.7	1.23
1986/87	0.5	14.7	6.9	56.3	1.21
1987/88	0.8	17.9	6.9	54.3	1.56
1988/89	0.3	13.9	5.5	39.3	2.61
1989/90	0.3	12.1	6.9	54.4	1.48

NA = Not available.

1/ Includes quantity under loan and farmer-owned reserve. 2/ Preliminary.
6/ Deficiency and diversion payments. 7/ Deficiency, diversion and disaster

and prices, 1984/85-1990/91

Disappearance					Ending stocks May 31		
Domestic use			Exports	Total disappearance	Govt. owned	Privately owned 1/	Total
Seed	Feed and residual	Total					
Million bushels							
31.2	435.7	507.9	0.5	508.4	1.4	178.5	179.9
32.5	464.2	540.7	1.2	541.9	1.9	181.8	183.7
38.0	384.4	467.4	0.9	468.3	3.5	129.2	132.7
31.6	358.2	439.6	0.5	440.2	3.5	108.5	112.0
27.1	193.8	293.6	0.6	294.2	2.0	96.3	98.3
26.4	299.9	414.8	0.8	415.6	1.0	120.5	121.5
120.0---	300.0	420.0	1.0	421.0			116.0

Average prices				Government support program		
Received by farmers 4/	Minneapolis No. 2 white, heavy	Portland No. 2 white, heavy	Toledo No. 2	National average loan rate	Target price	Total payments to participants
--\$/bu.				\$ million		
1.69	1.81	2.12	1.92	1.31	1.60	NA
1.23	1.31	1.60	1.08	1.31	1.60	5/ 8
1.21	1.46	1.53	1.20	0.99	1.60	6/ 32
1.56	1.92	1.76	1.68	0.94	1.60	6/ 27
2.61	2.80	2.24	2.26	0.90	1.55	7/ 47
1.48				0.85	1.50	7/ 3

nary. 3/ Projected. 4/ Excludes support payments. 5/ Deficiency payments.
aster payments.

Appendix table 7--Corn: Quarterly supply and disappearance, specified periods

Year beginning September 1	Supply				Domestic	
	Begin- ning stocks	Produc- tion	Imports	Total	Food, alcohol, and industrial	Seed
Million b						
1984/85						
Sept.-Nov.	1,006.3	7,672.1	0.7	8,679.1	249.7	0.0
Dec.-Feb.	6,631.1	---	0.1	6,631.2	241.5	0.0
Mar.-May	4,623.2	---	0.8	4,624.0	283.8	17.0
June-Aug.	2,835.5	---	0.1	2,835.6	295.0	4.2
Mkt. year	1,006.3	7,672.1	1.7	8,680.1	1,070.0	21.2
1985/86						
Sept.-Nov.	1,648.2	8,875.5	0.9	10,524.6	278.0	0.0
Dec.-Feb.	8,614.7	---	0.9	8,615.6	264.0	0.0
Mar.-May	6,587.1	---	2.2	6,589.3	293.0	16.1
June-Aug.	4,990.0	---	5.9	4,995.9	305.0	3.4
Mkt. year	1,648.2	8,875.5	9.9	10,533.6	1,140.0	19.5
1986/87						
Sept.-Nov.	4,039.5	8,225.8	0.7	12,266.0	280.0	0.0
Dec.-Feb.	10,305.5	---	0.2	10,305.7	270.0	0.0
Mar.-May	8,248.2	---	0.4	8,248.6	310.0	16.4
June-Aug.	6,332.2	---	0.4	6,332.6	315.0	0.3
Mkt. year	4,039.5	8,225.8	1.7	12,267.0	1,175.0	16.7
1987/88						
Sept.-Nov.	4,881.7	7,131.3	0.5	12,013.5	292.0	0.0
Dec.-Feb.	9,771.0	---	0.7	9,771.7	282.0	0.0
Mar.-May	7,635.6	---	1.4	7,637.0	315.0	16.7
June-Aug.	5,839.2	---	0.8	5,840.0	323.0	0.5
Mkt. year	4,881.7	7,131.3	3.4	12,016.4	1,212.0	17.2
1988/89						
Sept.-Nov.	4,259.1	4,928.7	0.6	9,188.4	294.0	0.0
Dec.-Feb.	7,071.6	---	0.6	7,072.2	284.0	0.0
Mar.-May	5,203.9	---	1.2	5,205.1	320.2	16.8
June-Aug.	3,419.3	---	0.4	3,419.7	328.2	1.9
Mkt. year	4,259.1	4,928.7	2.8	9,190.6	1,226.4	18.7
1989/90						
Sept.-Nov.	1,930.4	7,527.2	0.6	9,458.2	298.0	0.0
Dec.-Feb.	7,079.2	---	0.5	7,079.7	295.0	0.0
Mar.-May						
June-Aug.						
Mkt. year 2/	1,930.4	7,527.2	2.2	9,459.8	---1,280.0---	
1990/91:						
Mkt. year 3/	1,329.8	8,100.0	2.0	9,432.0	---1,315.0---	

--- = Not applicable.

1/ Includes quantity under loan and farmer-owned reserve. 2/ Projected.

Periods, 1984/85-1990/91

Disappearance					Ending stocks		
Domestic use	Feed and residual	Total	Exports	Total disappearance	Govt. owned	Privately owned 1/	Total
Seed							
ion bushels							
0.0	1,295.1	1,544.8	503.2	2,048.0	206.7	6,424.4	6,631.1
0.0	1,186.1	1,427.6	580.4	2,008.0	209.7	4,413.5	4,623.2
17.0	1,013.0	1,313.8	474.7	1,788.5	221.7	2,613.8	2,835.5
4.2	596.3	895.5	291.9	1,187.4	224.9	1,423.3	1,648.2
21.2	4,090.5	5,181.7	1,850.2	7,031.9	224.9	1,423.3	1,648.2
0.0	1,217.1	1,495.1	414.8	1,909.9	388.6	8,226.1	8,614.7
0.0	1,304.3	1,568.3	460.2	2,028.5	509.4	6,077.7	6,587.1
16.1	1,088.8	1,397.9	201.4	1,599.3	550.9	4,439.1	4,990.0
3.4	497.1	805.5	150.9	956.4	545.7	3,493.8	4,039.5
19.5	4,107.3	5,266.8	1,227.3	6,494.1	545.7	3,493.8	4,039.5
0.0	1,362.3	1,642.3	318.2	1,960.5	968.2	9,337.3	10,305.5
0.0	1,474.7	1,744.7	312.8	2,057.5	1,362.2	6,886.0	8,248.2
16.4	1,093.9	1,420.3	496.1	1,916.4	1,491.5	4,840.7	6,332.2
0.3	770.3	1,085.6	365.3	1,450.9	1,443.2	3,438.5	4,881.7
16.7	4,701.2	5,892.9	1,492.4	7,385.3	1,443.2	3,438.5	4,881.7
0.0	1,554.9	1,846.9	395.6	2,242.5	1,683.4	8,087.6	9,771.0
0.0	1,449.4	1,731.4	404.7	2,136.1	1,767.7	5,867.9	7,635.6
16.7	956.4	1,288.1	509.7	1,797.8	1,304.9	4,534.3	5,839.2
0.5	851.0	1,174.5	406.4	1,580.9	835.0	3,424.1	4,259.1
17.2	4,811.7	6,040.9	1,716.4	7,757.3	835.0	3,424.1	4,259.1
0.0	1,352.0	1,646.0	470.8	2,116.8	611.0	6,460.6	7,071.6
0.0	1,081.7	1,365.7	502.6	1,868.3	465.0	4,738.9	5,203.9
16.8	857.2	1,194.2	591.6	1,785.8	417.7	3,001.6	3,419.3
1.9	695.8	1,025.9	463.4	1,489.3	400.0	1,530.4	1,930.4
18.7	3,986.7	5,231.8	2,028.4	7,260.2	400.0	1,530.4	1,930.4
0.0	1,498.7	1,796.7	582.3	2,379.0	628.2	6,451.0	7,079.2
0.0	1,290.4	1,585.4	681.6	2,267.0	537.2	4,275.5	4,812.7
---	4,550.0	5,830.0	2,300.0	8,130.0	300.0	1,029.8	1,329.8
---	4,650.0	5,965.0	2,200.0	8,165.0			1,267.0

ed.

Appendix table 8--Sorghum: Marketing year supply and disappearance, speci

Year beginning September 1	Begin- ning stocks	Supply			Food, alcohol, and industrial
		Produc- tion	Imports	Total	
Milli					
1984/85					
Sept.-May	287.4	866.2	0.1	1,153.7	12.4
June-Aug.	360.8	0.0	0.0	360.8	2.9
Mkt. year	287.4	866.2	0.1	1,153.7	15.3
1985/86					
Sept.-May	300.2	1,120.3	0.0	1,420.5	22.1
June-Aug.	630.0	0.0	0.0	630.0	3.9
Mkt. year	300.2	1,120.3	0.0	1,420.5	26.0
1986/87					
Sept.-May	551.0	938.9	0.0	1,489.9	8.2
June-Aug.	835.0	0.0	0.0	835.0	2.2
Mkt. year	551.0	938.9	0.0	1,489.9	10.4
1987/88					
Sept.-May	743.3	730.8	0.0	1,474.1	14.2
June-Aug.	807.8	0.0	0.0	807.8	9.3
Mkt. year	743.3	730.8	0.0	1,474.1	23.5
1988/89					
Sept.-May	662.7	576.7	0.0	1,239.4	17.0
June-Aug.	559.0	0.0	0.0	559.0	3.5
Mkt. year	662.7	576.7	0.0	1,239.4	20.5
1989/90					
Sept.-Feb. June-Aug.	439.5	617.9	0.0	1,057.4	8.0
Mkt. year 2/	439.5	617.9	0.0	1,057.4	13.5
1990/91					
Mkt. year 2/	267.0	685.0	0.0	952.0	---15.0

1/ Includes quantity under loan and farmer-owned reserve. 2/ Projected

specified periods, 1984/85-1990/91--Continued

	Disappearance				Ending stocks		
	Domestic use Seed Feed and residual	Total	Exports	Total disap- pearance	Govt. owned	Privately owned 1/	Total
Million bushels							
1.5	542.2	556.1	236.8	792.9	111.1	249.7	360.8
0.5	(2.9)	0.5	60.1	60.6	112.1	188.1	300.2
2.0	539.3	556.6	296.9	853.5	112.1	188.1	300.2
1.2	626.9	650.2	140.3	790.5	181.4	448.6	630.0
0.5	36.9	41.3	37.7	79.0	207.2	343.8	551.0
1.7	663.8	691.5	178.0	869.5	207.2	343.8	551.0
1.0	490.9	500.1	154.8	654.9	400.4	434.6	835.0
0.6	45.4	48.2	43.5	91.7	409.0	334.3	743.3
1.6	536.3	548.3	198.3	746.6	409.0	334.3	743.3
0.8	466.0	481.0	185.3	666.3	535.0	272.8	807.8
0.5	89.3	99.1	46.0	145.1	463.6	199.1	662.7
1.3	555.3	580.1	231.3	811.4	463.6	199.1	662.7
0.8	424.8	442.6	237.8	680.4	463.6	95.4	559.0
0.7	43.2	47.4	72.1	119.5	340.9	98.6	439.5
1.5	468.0	490.0	309.9	799.9	340.9	98.6	439.5
0.2	360.7	368.9	175.0	543.9	223.0	290.5	513.5
1.5	525.4	540.4	250.0	790.4	190.0	77.0	267.0
-15.0---	500.0	515.0	250.0	765.0			187.0

ected.

Appendix table 9--Barley: Quarterly supply and disappearance, specified periods

Year beginning June 1	Supply				Domestic	
	Begin- ning stocks	Produc- tion	Imports	Total	Food, alcohol, and industrial	Seed
Million bus						
1984/85:						
June-Aug.	189.4	598.0	2.7	790.1	39.9	0.0
Sept.-Nov.	639.0	---	0.9	639.9	34.6	1.5
Dec.-Feb.	484.9	---	2.3	487.2	34.2	1.7
Mar.-May	358.7	---	1.5	360.2	40.3	18.2
Mkt. year	189.4	598.0	7.4	794.8	149.0	21.4
1985/86:						
June-Aug.	247.4	590.2	0.7	838.3	39.1	0.0
Sept.-Nov.	698.3	---	1.3	699.6	33.7	1.5
Dec.-Feb.	572.1	---	2.5	574.6	33.7	1.7
Mar.-May	464.7	---	1.7	466.4	40.7	18.1
Mkt. year	247.4	590.2	6.2	843.8	147.2	21.3
1986/87:						
June-Aug.	327.2	608.5	1.3	937.0	42.2	0.0
Sept.-Nov.	786.8	---	1.0	787.8	36.5	1.3
Dec.-Feb.	634.3	---	1.2	635.5	35.8	1.4
Mar.-May	499.3	---	3.1	502.4	41.6	15.2
Mkt. year	327.2	608.5	6.6	942.3	156.1	17.9
1987/88:						
June-Aug.	336.3	521.5	1.1	858.9	42.8	0.0
Sept.-Nov.	725.0	---	2.9	727.9	37.1	1.1
Dec.-Feb.	582.4	---	4.3	586.7	36.3	1.3
Mar.-May	458.5	---	3.0	461.5	42.1	13.3
Mkt. year	336.3	521.5	11.3	869.1	158.3	15.7
1988/89:						
June-Aug.	321.1	290	2.8	613.9	45.2	0.0
Sept.-Nov.	450.4	---	2.2	452.6	39.4	1.1
Dec.-Feb.	372.1	---	2.8	374.9	37.2	1.2
Mar.-May	280.6	---	2.7	283.3	42.9	12.7
Mkt. year	321.1	290	10.5	621.6	164.7	15.0
1989/90:						
June-Aug.	196.4	403.4	3.6	603.4	46.7	0.0
Sept.-Nov.	416.9	---	2.0	418.9	40.1	1.0
Dec.-Feb.	350.6	---	4.4	355.0	38.0	1.1
Mar.-May	252.7	---	1.5	254.2	40.6	12.3
Mkt. year 1/	196.4	403.4	11.5	611.3	165.4	14.4
1990/91: 2/						
Mkt. year	170.0	415.0	10.0	595.0	---	185.0---

--- = Not applicable.

1/ Preliminary. 2/ Projected.

Periods, 1984/85-1990/91

Period	Disappearance				Ending stocks		
	Domestic use- Feed and residual	Total	Exports	Total disap- pearance	Govt. owned	Privately owned 1/	Total
in bushels							
0.0	100.1	140.0	11.1	151.1	12.2	626.8	639.0
0.5	83.7	119.8	35.2	155.0	13.0	471.9	484.9
0.7	71.6	107.5	21.0	128.5	14.2	344.5	358.7
0.2	50.0	108.5	4.3	112.8	15.6	231.8	247.4
0.4	305.4	475.8	71.6	547.4	15.6	231.8	247.4
0.0	90.5	129.6	10.4	140.0	20.0	678.3	698.3
0.5	85.1	120.3	7.2	127.5	36.1	536.0	572.1
0.7	73.2	108.6	1.3	109.9	47.3	417.4	464.7
0.1	79.6	138.4	0.8	139.2	57.4	269.8	327.2
0.3	328.4	496.9	19.7	516.6	57.4	269.8	327.2
0.0	94.5	136.7	13.5	150.2	56.0	730.8	786.8
0.3	72.2	110.0	43.5	153.5	66.2	568.1	634.3
0.4	67.2	104.4	31.8	136.2	75.2	424.1	499.3
0.2	64.5	121.3	44.8	166.1	75.5	260.8	336.3
0.7	298.4	472.4	133.6	606.0	75.5	260.8	336.3
0.0	74.3	117.1	16.8	133.9	74.9	650.1	725.0
0.1	64.8	103.0	42.5	145.5	79.5	502.9	582.4
0.3	57.6	95.2	33.0	128.2	57.0	401.5	458.5
0.3	56.4	111.8	28.6	140.4	50.1	271.0	321.1
0.7	253.1	427.1	120.9	548.0	50.1	271.0	321.1
0.0	92.5	137.7	25.8	163.5	35.9	414.5	450.4
0.1	27.4	67.9	12.6	80.5	35.9	336.2	372.1
0.2	40.6	79.0	15.3	94.3	34.1	246.5	280.6
0.7	5.7	61.3	25.6	86.9	30.4	166.0	196.4
0.5	166.2	345.9	79.3	425.2	30.4	166.0	196.4
0.0	113.2	159.9	26.6	186.5	36.6	380.3	416.9
0.1	10.0	51.1	17.2	68.3	36.3	314.3	350.6
0.1	40.1	79.2	23.1	102.3	32.1	220.6	252.7
0.3	13.2	66.1	18.1	84.2	20.0	150.0	170.0
0.4	176.5	356.3	85.0	441.3	20.0	150.0	170.0
-	175.0	360.0	85.0	445.0			150.0

Appendix table 10--Average prices received by farmers, United States, by month, and loan rate, 1982-1989 1/

Year	Sept	Oct	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Average 2/	Loan rate
Corn:														
\$/bu.														
1982	2.15	1.98	2.13	2.26	2.36	2.56	2.71	2.95	3.03	3.04	3.13	3.35	2.55	2.55
1983	3.32	3.15	3.17	3.15	3.15	3.11	3.21	3.32	3.34	3.36	3.30	3.12	3.21	2.65
1984	2.90	2.65	2.55	2.56	2.64	2.62	2.67	2.70	2.68	2.64	2.60	2.44	2.63	2.55
1985	2.29	2.11	2.21	2.29	2.33	2.32	2.29	2.30	2.39	2.32	2.00	1.73	2.23	2.55
1986	1.45	1.40	1.47	1.50	1.48	1.42	1.47	1.52	1.66	1.69	1.60	1.47	1.50	1.92
1987	1.49	1.55	1.61	1.72	1.77	1.83	1.86	1.88	1.94	2.41	2.72	2.65	1.94	1.82
1988	2.60	2.58	2.51	2.53	2.60	2.59	2.60	2.56	2.58	2.52	2.47	2.27	2.54	1.77
1989	2.29	2.22	2.24	2.27	2.31	2.32	2.37 3/	2.52					2.33	1.65
Sorghum:														
\$/cwt.														
1982	3.80	3.70	3.78	3.97	4.09	4.42	4.67	4.92	5.05	5.05	5.03	5.29	4.41	4.32
1983	5.26	5.01	4.98	4.93	4.92	4.74	4.85	5.00	5.08	4.94	4.64	4.58	4.89	4.50
1984	4.24	4.05	4.05	4.15	4.16	4.10	4.24	4.46	4.54	4.52	4.04	3.74	4.15	4.32
1985	3.27	3.30	3.47	3.76	3.69	3.55	3.67	3.80	3.99	3.43	3.06	2.66	3.45	4.32
1986	2.36	2.34	2.39	2.41	2.37	2.36	2.44	2.58	2.69	2.79	2.66	2.52	2.45	3.25
1987	2.43	2.48	2.69	2.72	2.75	2.88	2.92	2.94	2.91	4.13	4.56	4.41	3.04	3.11
1988	4.26	4.16	3.99	4.07	4.09	4.05	4.04	4.21	4.03	3.90	4.00	3.81	4.05	3.00
1989	3.80	3.61	3.68	3.54	3.58	3.54	3.70 3/	3.92					3.66	2.80
Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Average 2/	Loan rate
Oats:														
\$/bu.														
1982	1.88	1.57	1.39	1.35	1.32	1.40	1.44	1.46	1.48	1.49	1.54	1.54	1.49	1.31
1983	1.51	1.46	1.45	1.55	1.62	1.67	1.73	1.81	1.88	1.81	1.82	1.84	1.62	1.36
1984	1.80	1.68	1.62	1.60	1.69	1.64	1.72	1.74	1.69	1.68	1.68	1.60	1.69	1.31
1985	1.59	1.31	1.16	1.10	1.08	1.17	1.20	1.18	1.16	1.14	1.13	1.21	1.23	1.31
1986	1.10	0.90	0.86	0.99	1.10	1.32	1.44	1.46	1.47	1.45	1.50	1.57	1.21	0.99
1987	1.52	1.29	1.40	1.49	1.61	1.62	1.76	1.79	1.84	1.78	1.82	1.84	1.56	0.94
1988	2.63	2.86	2.54	2.57	2.56	2.41	2.47	2.52	2.46	2.41	2.24	2.13	2.61	0.90
1989	1.82	1.53	1.47	1.38	1.47	1.48	1.53	1.47	1.43	1.39 3/	1.37		1.48	0.85
All barley:														
1982	2.39	2.16	2.20	2.17	1.98	2.06	2.19	2.16	2.00	2.09	2.22	2.36	2.18	2.08
1983	2.32	2.20	2.34	2.46	2.53	2.55	2.55	2.55	2.47	2.50	2.54	2.78	2.47	2.16
1984	2.61	2.54	2.26	2.25	2.29	2.25	2.19	2.24	2.21	2.18	2.16	2.22	2.29	2.08
1985	2.14	2.08	1.98	1.88	1.96	2.05	2.07	2.05	1.95	1.88	1.85	1.73	1.98	2.08
1986	1.57	1.67	1.51	1.45	1.58	1.69	1.62	1.60	1.63	1.69	1.69	1.76	1.61	1.56
1987	1.74	1.84	2.00	1.87	1.73	1.88	1.83	1.78	1.72	1.65	1.74	1.79	1.81	1.49
1988	2.45	2.97	2.96	2.94	2.86	2.96	2.73	2.74	2.67	2.74	2.73	2.64	2.80	1.44
1989	2.34	2.16	2.70	2.47	2.41	2.47	2.46	2.33	2.33	2.18 3/	2.17		2.40	1.34
Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May		
Feed barley:														
\$/bu.														
1982	2.52	2.23	1.98	1.91	1.87	1.94	1.98	2.07	1.99	2.08	2.26	2.43		
1983	2.52	2.31	2.23	2.41	2.45	2.51	2.52	2.58	2.47	2.54	2.55	2.86		
1984	2.72	2.60	2.10	2.13	2.19	2.19	2.20	2.22	2.27	2.19	2.16	2.30		
1985	2.26	2.05	1.75	1.74	1.85	1.90	2.03	2.00	1.90	1.83	1.85	1.81		
1986	1.61	1.44	1.21	1.33	1.49	1.62	1.59	1.56	1.61	1.69	1.71	1.84		
1987	1.79	1.67	1.54	1.57	1.66	1.68	1.63	1.65	1.64	1.59	1.73	1.76		
1988	2.07	2.34	2.37	2.39	2.34	2.30	2.27	2.28	2.29	2.35	2.32	2.27		
1989	2.18	1.96	2.06	1.98	1.95	2.09	2.09	2.02	2.09	1.98	3/ 1.99			
Malting barley:														
1982	2.26	2.10	2.38	2.58	2.22	2.26	2.39	2.32	2.00	2.09	2.13	2.18		
1983	2.05	2.06	2.50	2.69	2.72	2.61	2.61	2.50	2.47	2.46	2.54	2.53		
1984	2.52	2.48	2.50	2.52	2.52	2.39	2.18	2.29	2.11	2.17	2.17	2.10		
1985	2.02	2.13	2.49	2.33	2.24	2.32	2.19	2.13	1.99	1.93	1.85	1.66		
1986	1.52	2.07	2.23	1.85	1.83	1.78	1.65	1.70	1.69	1.69	1.65	1.66		
1987	1.68	2.04	2.55	2.39	1.88	2.07	2.01	2.15	1.80	1.69	1.75	1.81		
1988	2.80	3.26	3.38	3.47	3.41	3.34	3.27	3.32	3.22	3.22	3.16	3.04		
1989	2.62	2.68	3.04	2.87	2.89	2.90	2.87	2.72	2.61	2.46	3/ 2.46			

1/ Prices do not include an allowance for loans outstanding and Government purchases. 2/ U.S. season average prices based on monthly prices weighted by monthly marketings. 3/ Preliminary.

Source: Agricultural Prices, Agricultural Statistics Board, USDA.

Appendix table 11--Cash prices at principal markets, 1985-1989

Year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Average
\$/bu.													
Corn, no. 2 yellow, Central Illinois:													
1985	2.28	2.10	2.32	2.36	2.36	2.33	2.29	2.31	2.42	2.41	1.93	1.52	2.22
1986	1.34	1.34	1.55	1.52	1.44	1.38	1.46	1.56	1.75	1.74	1.60	1.46	1.51
1987	1.52	1.65	1.74	1.78	1.85	1.89	1.92	1.92	1.97	2.59	2.90	2.73	2.04
1988	2.70	2.71	2.56	2.60	2.65	2.60	2.65	2.57	2.62	2.54	2.49	2.29	2.58
1989	2.33	2.26	2.30	2.29	2.30	2.37	2.42	2.65					
Corn, no. 2 yellow, Gulf Ports:													
1985	2.59	2.50	2.69	2.75	2.72	2.63	2.56	2.57	2.68	2.63	2.12	1.85	2.52
1986	1.68	1.66	1.83	1.81	1.73	1.70	1.83	1.89	2.06	2.06	1.95	1.81	1.83
1987	1.86	1.99	2.08	2.11	2.20	2.23	2.29	2.28	2.29	3.05	3.22	3.02	2.38
1988	3.08	3.07	2.89	2.99	3.01	2.99	3.02	2.93	2.99	2.87	2.73	2.57	2.93
1989	2.62	2.99	2.75	2.76	2.69	2.70	2.72	3.01					
Corn, no. 2 yellow, St. Louis:													
1985	2.38	2.27	2.50	2.59	2.55	2.50	2.42	2.46	2.56	2.52	2.01	1.67	2.37
1986	1.47	1.46	1.68	1.69	1.61	1.57	1.65	1.74	1.93	1.92	1.79	1.65	1.68
1987	1.65	1.78	1.91	1.97	2.05	2.07	2.09	2.10	2.13	2.77	2.96	2.81	2.19
1988	2.82	2.82	2.70	2.76	2.81	2.79	2.82	2.76	2.83	2.70	2.57	2.38	2.73
1989	2.38	2.44	2.48	2.44	2.45	2.48	2.57	2.77					
Sorghum, no.2 yellow, Gulf Ports 1/:													
1985	3.70	3.97	4.34	4.52	4.45	4.30	4.28	4.50	4.80	3.90	3.37	2.71	4.07
1986	2.95	3.15	3.26	3.15	3.05	3.09	3.35	3.30	3.51	3.50	3.30	3.04	3.22
1987	3.13	3.35	3.55	3.50	3.65	3.80	3.86	3.70	3.73	5.00	5.33	4.93	3.96
1988	4.99	4.91	4.64	4.93	4.99	4.99	5.02	4.89	5.05	4.75	4.02	4.53	4.81
1989	4.67	4.61	4.69	4.70	4.62	4.59	4.70	4.97					
Sorghum, no. 2 yellow, Kansas City:													
1985	3.56	3.62	3.75	3.97	3.95	3.80	3.82	4.00	4.25	4.00	3.20	2.71	3.72
1986	2.47	2.60	2.70	2.62	2.50	2.57	2.80	2.85	3.10	3.20	2.80	2.55	2.73
1987	2.64	2.75	2.90	2.95	3.05	3.24	3.27	3.16	3.21	4.58	4.79	4.28	3.40
1988	4.27	4.17	4.00	4.23	4.24	4.26	4.32	4.17	4.29	4.15	3.96	3.92	4.17
1989	3.96	3.91	4.00	3.98	4.00	3.84	4.02	4.32					
Sorghum, no. 2 yellow, Texas High Plains:													
1985	4.19	4.38	4.30	4.49	4.47	4.36	4.33	4.48	4.77	4.84	3.93	3.36	4.33
1986	3.35	3.24	2.97	3.06	2.94	2.89	3.06	3.32	3.56	3.60	3.58	3.30	3.24
1987	3.19	3.27	3.27	3.39	3.40	3.53	3.56	3.54	3.55	4.84	5.25	4.96	3.81
1988	4.98	4.95	4.62	4.63	4.75	4.69	4.72	4.63	4.50	4.59	4.46	4.44	4.66
1989	4.39	4.61	4.69	4.03	4.04	4.02	4.10	4.38					
Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Average
\$/bu.													
Barley, no. 3 or better malting, 65% or better plump, Minneapolis:													
1985	2.46	2.25	2.03	2.15	2.10	2.27	2.29	2.28	2.20	2.34	2.40	2.07	2.24
1986	1.84	1.75	1.61	1.76	1.93	2.02	1.88	1.81	1.92	2.01	2.05	2.12	1.89
1987	2.07	1.93	1.73	1.98	2.08	2.05	2.01	2.02	2.15	2.08	2.11	2.24	2.04
1988	3.61	3.87	4.25	4.40	4.39	4.14	3.82	4.14	4.19	4.33	4.29	3.84	4.11
1989	3.02	3.33	3.57	3.42	3.49	3.18	3.19	3.20	3.02	2.83	2.97		
Barley, no. 2 feed, Minneapolis 2/, 3/:													
1985	1.90	1.66	1.46	1.40	1.41	1.49	1.60	1.57	NA	NA	NA	1.31	1.53
1986	1.23	1.16	1.13	1.27	1.50	1.63	1.23	NA	NA	1.64	1.76	1.86	1.44
1987	1.73	1.59	1.60	1.76	1.78	1.82	1.74	1.72	1.77	1.88	1.94	1.98	1.78
1988	2.41	2.31	2.08	2.24	2.32	2.27	2.14	2.24	2.33	2.49	2.52	2.41	2.31
1989	2.12	2.22	2.17	2.14	2.17	2.15	2.23	2.28	2.20	2.27	2.27		
Oats, no. 2 heavy white, Minneapolis:													
1985	1.59	1.44	1.23	1.24	1.19	1.32	1.39	1.37	1.30	1.27	1.16	1.22	1.31
1986	1.18	1.05	1.12	1.29	1.39	1.72	1.66	1.64	1.56	1.46	1.59	1.83	1.46
1987	1.64	1.61	1.77	1.85	1.97	2.05	2.02	2.10	2.06	1.93	1.94	2.12	1.92
1988	3.26	3.25	3.09	3.07	2.99	2.71	2.74	2.87	2.59	2.49	2.30	2.22	2.80
1989	2.03	1.72	1.53	1.58	1.56	1.68	1.70	1.56	1.40	1.57	1.63		

NA = Not available.

NQ = No quotes.

1/ Rail delivered to Texas Gulf. 2/ Prior to June 1977 reported as barley, no. 3 or better. 3/ Reporting point changed from Minneapolis #2 feed to Duluth #2 feed beginning March 1987. 4/ Preliminary.

Source: Grain and Feed Market News, Agricultural Marketing Service, USDA.

Appendix table 12--Feed-price ratios for livestock, poultry, and milk, by months, 1982-1989

Year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. 1/	May	June	July	Aug.	Average
Hog/corn, U.S. basis 2/:													
1982	28.50	28.20	24.60	23.70	23.40	21.90	18.60	15.90	15.10	14.40	13.90	13.90	20.17
1983	13.30	12.80	11.80	14.00	15.40	14.60	14.30	14.30	14.10	14.60	15.80	16.20	14.27
1984	16.00	16.50	18.40	19.00	18.20	18.40	16.30	15.30	15.40	16.90	17.60	17.40	17.12
1985	17.30	20.40	19.50	19.80	19.00	18.40	17.60	17.30	19.20	22.70	29.50	35.90	21.38
1986	40.20	37.90	35.90	33.70	31.90	33.90	32.20	33.40	32.80	35.00	37.30	39.90	35.34
1987	36.40	31.50	25.20	23.40	24.30	25.00	22.70	22.30	23.90	19.50	16.20	16.90	23.94
1988	15.70	15.00	14.40	15.70	15.70	15.60	15.10	14.40	16.10	17.90	18.60	20.20	16.20
1989	19.10	20.90	20.10	21.20	20.50	20.80	21.60	21.00					
Beef-steer/corn, Omaha 3/:													
1982	27.50	27.70	25.10	25.20	24.50	23.40	22.70	21.90	21.80	21.20	19.60	18.10	23.23
1983	17.80	18.40	18.30	19.80	21.60	22.10	21.10	20.40	19.70	19.10	20.40	20.70	19.95
1984	21.30	22.40	24.60	25.60	24.80	24.10	22.20	21.50	21.50	21.00	20.40	21.70	22.59
1985	21.80	25.70	27.80	26.70	25.60	24.40	24.00	22.90	23.00	22.30	28.90	36.70	25.82
1986	42.10	42.70	39.70	38.80	40.80	43.90	41.90	42.20	40.20	38.90	41.40	43.90	41.38
1987	42.10	41.40	38.40	36.70	36.40	37.40	38.20	39.40	38.60	29.50	24.40	26.10	35.72
1988	26.40	26.40	28.40	27.90	28.10	28.70	29.40	30.20	29.30	29.10	29.60	32.10	28.80
1989	31.00	30.75	31.67	32.90	34.20	34.00	32.60	31.10					
Milk/feed, U.S. basis 4/:													
1982	1.57	1.61	1.62	1.60	1.59	1.56	1.55	1.49	1.45	1.43	1.45	1.41	1.53
1983	1.36	1.39	1.36	1.34	1.33	1.33	1.34	1.32	1.32	1.32	1.35	1.40	1.35
1984	1.48	1.56	1.62	1.59	1.57	1.57	1.55	1.51	1.47	1.45	1.44	1.47	1.52
1985	1.51	1.56	1.55	1.53	1.48	1.50	1.48	1.48	1.46	1.45	1.51	1.55	1.51
1986	1.61	1.75	1.77	1.77	1.73	1.69	1.63	1.61	1.57	1.57	1.56	1.58	1.65
1987	1.64	1.65	1.65	1.63	1.51	1.47	1.43	1.40	1.37	1.36	1.15	1.19	1.45
1988	1.25	1.32	1.36	1.37	1.37	1.34	1.30	1.29	1.27	1.28	1.37	1.43	1.33
1989	1.52	1.62	1.70	1.77	1.69	1.55	1.47	1.45					
Egg/feed, U.S. basis 5/:													
1982	6.00	6.30	6.30	6.00	5.70	5.80	6.10	5.80	6.00	5.80	5.70	6.10	5.97
1983	6.00	6.20	6.90	7.70	8.80	8.50	7.40	8.50	6.50	5.80	5.80	5.80	6.99
1984	5.90	5.70	6.50	6.30	5.50	5.60	6.30	5.50	5.70	5.90	5.90	6.50	5.94
1985	7.10	7.30	7.50	7.40	7.20	6.90	7.60	6.40	6.40	5.70	6.90	7.30	6.98
1986	7.30	7.00	8.00	7.80	7.30	7.10	6.60	6.60	5.90	6.00	5.70	5.60	6.74
1987	6.50	6.00	6.40	5.70	5.60	5.30	5.60	5.20	5.00	5.30	4.90	4.90	5.53
1988	5.40	5.30	5.40	5.40	5.90	5.80	7.50	6.30	5.90	6.00	6.10	6.80	5.98
1989	6.80	7.10	7.90	8.30	8.40	7.10	8.00	7.30					
Broiler/feed, U.S. basis 6/:													
1982	2.60	2.50	2.50	2.50	2.60	2.70	2.40	2.30	2.40	2.60	2.80	2.80	2.56
1983	2.70	2.50	2.80	2.90	3.10	3.10	3.10	2.70	2.70	2.70	3.00	2.70	2.83
1984	2.80	2.60	2.80	2.70	2.90	2.90	2.80	2.80	3.10	3.20	3.10	3.10	2.90
1985	3.20	3.10	3.50	3.20	3.20	3.10	3.10	3.10	3.40	3.80	4.50	4.60	3.48
1986	3.80	4.40	3.90	3.40	3.60	3.50	3.30	3.20	3.30	3.00	2.90	3.30	3.47
1987	2.90	2.60	2.70	2.50	2.80	3.70	2.80	3.10	3.70	4.10	3.40	3.40	3.14
1988	3.20	2.80	2.70	2.80	2.90	2.90	3.10	3.30	3.80	3.60	3.30	3.10	3.13
1989	3.10	2.70	2.70	2.60	2.70	3.00	3.30	3.10					
Turkey/feed, U.S. basis 7/:													
1982	3.80	3.90	3.90	3.00	2.90	2.90	2.90	2.70	2.90	3.00	2.80	2.80	3.13
1983	3.00	3.00	3.10	3.50	3.60	3.20	3.30	3.30	3.30	3.30	3.60	3.80	3.33
1984	3.90	4.40	5.00	5.50	4.70	3.80	3.70	3.70	3.70	3.90	4.20	4.50	4.25
1985	5.00	5.50	5.50	5.50	3.40	3.40	3.50	3.50	3.80	4.30	4.50	4.60	4.38
1986	4.70	4.90	4.80	4.00	3.30	3.40	3.40	3.50	3.40	3.30	3.10	3.00	3.73
1987	2.90	2.80	3.10	3.60	2.90	2.60	2.50	2.70	2.80	3.00	3.00	3.10	2.92
1988	3.40	3.60	3.60	2.90	2.70	2.90	3.10	3.30	3.40	3.50	3.30	3.30	3.25
1989	3.00	3.20	3.40	3.30	3.00	2.80	3.10	3.10					

1/ April 1990 is preliminary. 2/ Bushels of corn equal in value to 100 pounds of hog, live weight. 3/ Based on price choice beef-steers, 900-1100 pounds. 4/ Pounds of 16-percent mixed dairy feed equal in value to 1 pound whole milk. 5/ Pounds of laying feed equal in value to 1 dozen eggs. 6/ Pounds of broiler grower feed equal in value to 1 pound broiler, live weight. 7/ Pounds of turkey grower feed equal in value to 1 pound of turkey, live weight.

Sources: Agricultural Prices, Agricultural Statistics Board, USDA.
Livestock, Meat & Wool Market News, Agricultural Marketing Service, USDA.

Table 13--Price trends, selected feeds, and corn products

Item	Unit	Sept.-Aug. 1988/89 1/	1989				1990			
			Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
Wholesale, mostly bulk 2/:										
Soybean meal, 44% solvent, Decatur	\$/ton	216.76	217	192	183.40	179.40	172.30	161.90	165.10	165.40
Soybean meal, high protein, Decatur	"	256.50	235	208	194.90	191.60	183.80	172.90	176.40	1788.00
Cottonseed meal, 41% solvent, Memphis	"	188.05	190	181	180.00	180.00	160.00	150.00	146.25	150.00
Linseed meal, 34% solvent, Minneapolis	"	166.31	145	129	126.25	128.75	132.50	124.50	126.25	133.75
Meat and bone meal, Kansas City	"	259.83	231	226	220.10	220.00	194.60	194.40	199.40	199.10
Fishmeal, 67% protein, East Coast	"	445.28	383	381	384.40	386.25	388.50	389.40	387.50	320.60
Corn gluten feed, Illinois pts.	"	117.32	108	110	109.75	110.40	110.30	108.75	108.75	102.10
Corn gluten meal, 60% protein, Illinois pts.	"	282.49	267	313	298.75	280.00	281.00	260.90	238.75	238.10
Brewers' dried grains, Milwaukee	"	128.45	99	103	116.25	130.00	128.50	93.00	84.40	81.90
Distillers' dried grains, Lawrenceburg, Indiana	"	129.26	142	140	131.00	121.00	122.00	120.25	115.25	117.25
Feather meal, Arkansas pts.	"	257.95	225	227	246.25	260.00	237.00	207.20	199.40	207.50
Wheat bran, Kansas City	"	85.98	74	93	100.00	93.90	89.30	74.00	71.50	79.10
Wheat middlings, Kansas City	"	85.98	74	93	100.00	93.90	89.30	74.00	71.50	79.10
Rice bran, f.o.b. mills, Arkansas	"	64.82	65	63	72.00	78.90	83.10	54.00	52.60	60.20
Hominy feed, Illinois pts.	"	91.66	89	91	85.75	88.70	85.80	82.90	89.60	94.10
Alfalfa meal, dehydrated, Kansas City	"	136.68	124	125	129.50	133.75	136.00	136.25	136.00	133.75
Cane molasses, New Orleans	"	61.80	50	51	50.00	51.25	52.75	53.10	52.50	54.25
Molasses beet pulp, Los Angeles	"	114.01	123	116	118.10	121.50	WQ	WQ	118.00	118.00
Animal fat, Kansas City	c/lb.	11.53	10.00	10.30	10.20	10.50	11.20	11.60	11.70	11.40
Urea, 42% nitrogen, Forth Worth	\$/ton	206.33	190	190	194	195	195	206	205	202
Corn, no. 2 white, Kansas City	\$/bu.	3.77	2.95	2.89	2.85	2.90	3.00	3.00	3.00	2.95
Prices paid, U.S. basis 3/ 4/:										
Soybean meal, 44%	\$/cwt	16.20	---	15	---	---	13.50	---	---	12.70
Cottonseed meal, 41%	"	15.50	---	15	---	---	15.00	---	---	14.50
Wheat bran	"	10.83	---	11	---	---	10.90	---	---	10.80
Wheat middlings	"	9.52	---	9	---	---	9.70	---	---	9.47
Broiler grower feed	\$/ton	244.25	---	223	---	---	224.00	---	---	217.00
Laying feed	"	214.25	---	200	---	---	199.00	---	---	195.00
Turkey grower feed	"	257.75	---	243	---	---	239.00	---	---	239.00
Chick starter	"	246.75	---	230	---	---	227.00	---	---	223.00
Dairy feed, 16%	"	192.25	---	182	---	---	186.00	---	---	181.00
Beef cattle concentrate, 32-36% protein 5/	"	268.25	---	263	---	---	262.00	---	---	250.00
Hog concentrate, 38-42% protein 5/	"	355.75	---	327	---	---	311.00	---	---	296.00
Stock salt 5/	50 lb	3.36	---	3	---	---	3.42	---	---	3.47
Corn products, wholesale 6/:										
Corn meal, yellow, New York	\$/cwt	13.16	12.88	13.03	13.08	13.44	13.11	13.12	13.28	13.77
Grits (brewers'), Chicago	"	10.06	9.84	9.99	10.04	9.96	9.98	9.99	10.12	10.50
Syrup, Midwest/West	c/lb.	10.98	11.36	10.46	10.46	10.46	10.65	11.21	11.71	11.71
Sugar (dextrose), Midwest	"	24.72	25.00	24.50	24.50	24.50	24.50	24.50	24.50	24.50
High-fructose (dried weight in tank cars), Midwest	"	13.39	15.52	12.46	12.46	12.46	12.46	12.46	12.84	14.38
Corn starch, f.o.b. Midwest	\$/cwt	10.25	10.40	10.40	10.25	10.25	10.00	10.00	10.25	10.50

--- = Not applicable.

1/ Preliminary. 2/ Grain and Feed Market News, Agricultural Marketing Service, USDA, except urea which is from Feedstuffs, Miller Publishing Co., Minneapolis, Minnesota. 3/ Agricultural Prices, Agricultural Statistics Board, USDA. 4/ Prices paid data is available on a quarterly basis only. 5/ Prices previously published in cwt. 6/ Milling and Baking News, Kansas City, Missouri, except starch which is from industry sources.

Appendix table 14--Corn, sorghum, barley, and oats exports, 1987/88 to date 1/--Continued

Year and month	Corn			Year and month	Barley		Oats	
	Grain only	Total	Sorghum		Grain only	Total	Grain only	Total
	Bushels				Bushels			
1987/88				1987/88				
Sept.	135,401,494	136,128,505	17,831,044	June	517,681	742,738	104,217	187,886
Oct.	137,692,620	138,784,114	16,734,001	July	7,421,463	7,675,579	50,113	92,430
Nov.	122,467,307	123,085,243	10,968,017	Aug.	8,893,825	9,257,652	18,135	153,171
1st Qtr.	395,561,421	397,997,861	45,533,062	1st Qtr.	16,832,969	17,675,969	172,465	433,487
Dec.	148,173,110	149,269,833	21,239,967	Sept.	9,658,418	10,363,963	36,051	74,210
Jan.	133,336,988	134,196,121	19,399,501	Oct.	16,149,719	17,238,723	62,220	144,789
Feb.	123,237,769	124,218,907	22,498,453	Nov.	16,700,948	18,605,946	38,617	99,130
2nd Qtr.	404,747,867	407,684,861	63,137,921	2nd Qtr.	42,509,085	46,208,631	136,888	318,129
Mar.	164,083,150	165,253,019	24,662,618	Dec.	15,583,102	16,123,445	5,680	36,703
Apr.	166,222,992	166,980,188	30,324,679	Jan.	10,672,812	10,910,229	96,376	147,370
May	179,365,299	180,377,177	22,103,010	Feb.	6,764,525	7,239,965	29,937	148,578
3rd Qtr.	509,671,441	512,610,384	77,090,307	3rd Qtr.	33,020,439	34,273,639	131,993	332,652
June	132,934,667	133,784,539	13,740,797	Mar.	15,349,596	15,756,272	24,173	49,618
July	122,945,548	124,276,098	20,243,604	Apr.	8,796,666	9,029,851	12,420	114,674
Aug.	150,564,179	151,445,670	11,836,824	May	4,470,071	4,979,881	22,950	215,233
4th Qtr.	406,444,394	409,506,307	45,821,225	4th Qtr.	28,616,333	29,766,004	59,543	379,525
Total	1,716,425,123	1,727,799,413	231,582,515	Total	120,978,826	127,924,243	500,889	1,463,793
1988/89				1988/89				
Sept.	150,843,842	151,736,284	26,656,522	June	12,108,210	12,402,962	102,245	258,289
Oct.	170,295,536	171,523,785	19,499,969	July	11,513,586	11,757,762	38,739	88,239
Nov.	149,632,839	151,030,488	18,319,440	Aug.	2,214,904	2,500,232	24,394	145,962
1st Qtr.	470,772,217	474,290,557	64,475,931	1st Qtr.	25,836,700	26,660,956	165,378	492,490
Dec.	172,492,326	173,546,904	27,975,619	Sept.	8,758,198	8,833,519	21,017	90,049
Jan.	175,221,513	176,487,573	32,501,841	Oct.	1,432,089	2,161,176	30,378	57,096
Feb.	154,909,994	158,177,973	33,002,703	Nov.	2,452,268	3,055,490	73,371	126,759
2nd Qtr.	502,623,833	508,212,450	93,480,163	2nd Qtr.	12,642,555	14,050,185	124,766	273,904
Mar.	202,840,169	206,563,860	30,648,140	Dec.	15,121,435	15,440,102	29,605	51,848
Apr.	177,475,933	180,898,856	28,248,011	Jan.	84,517	417,785	115,957	154,015
May	211,303,127	212,764,901	21,239,060	Feb.	81,490	439,958	65,245	112,585
3rd Qtr.	591,619,229	600,227,617	80,135,211	3rd Qtr.	15,287,442	16,297,845	210,807	318,448
June	223,487,607	225,359,132	24,105,107	Mar.	1,964,297	2,424,381	22,487	70,294
July	133,145,813	135,157,047	25,119,434	Apr.	13,817,421	14,373,832	27,765	69,774
Aug.	106,804,440	109,287,340	22,869,115	May	9,781,368	10,571,462	27,121	60,581
4th Qtr.	463,437,860	469,803,519	72,093,656	4th Qtr.	25,563,086	27,369,675	77,373	200,649
Total	2,028,453,139	2,052,534,143	310,184,961	Total	79,329,783	84,378,661	578,324	1,285,491
1989/90				1989/90				
Sept.	113,776,974	116,262,446	37,711,379	June	7,412,020	8,169,340	73,555	134,619
Oct.	174,744,707	177,648,151	33,729,330	July	9,666,205	10,690,552	99,550	154,363
Nov.	293,764,931	296,074,486	22,408,755	Aug.	9,513,210	9,985,797	60,059	185,406
1st Qtr.	582,286,612	589,985,083	93,849,464	1st Qtr.	26,591,435	28,845,689	233,164	474,388
Dec.	258,806,792	260,538,272	19,612,697	Sept.	8,060,139	9,274,483	137,368	245,862
Jan.	239,115,226	241,832,437	33,378,612	Oct.	4,634,063	5,354,195	86,668	183,582
Feb.	183,701,798	186,664,605	28,182,429	Nov.	4,520,961	5,397,789	46,922	103,742
2nd Qtr.	681,623,816	689,035,314	81,173,738	2nd Qtr.	17,215,163	20,026,467	270,958	533,185
Mar.	192,735,660	195,963,452	31,489,112	Dec.	9,913,639	10,571,944	55,999	83,079
Apr.				Jan.	6,243,980	7,000,416	59,397	93,083
May				Feb.	6,895,254	7,084,286	36,769	65,525
3rd Qtr.				3rd Qtr.	23,052,873	24,656,646	152,165	241,687
June				Mar.	4,789,751	5,024,081	66,607	102,001
July				Apr.				
Aug.				May				
4th Qtr.				4th Qtr.				
Total				Total				

1/ Total corn exports include grain only (white, yellow, seed, relief), dry process (cornmeal for relief, as grain, grits), and wet process (corn starch, sugar dextrose, glucose, high fructose). Sorghum includes seed and unmilled. Barley includes grain only (grain for malting purposes, other) and barley malt. Oats include grain and oatmeal (bulk and packaged).

Source: Bureau of the Census, U.S. Department of Commerce.

Appendix table 15--Corn, sorghum, barley, and oats imports, 1987/88 to date 1/

Year and month	Corn			Sorghum	Year and month	Barley		Oats	
	Grain only	Total				Grain only	Total	Grain only	Total
	Bushels				Bushels				
1987/88					1987/88				
Sept.	130,361	151,725	0		June	683,655	895,759	3,730,421	3,760,272
Oct.	354,333	373,790	24		July	195,998	445,492	1,717,932	1,735,424
Nov.	77,145	101,481	15		Aug.	220,222	434,668	1,541,932	1,582,741
1st Qtr.	561,839	626,996	39		1st Qtr.	1,099,875	1,775,919	6,990,285	7,078,437
Dec.	246,126	298,521	0		Sept.	1,061,243	1,396,437	1,712,779	1,744,204
Jan.	126,012	167,032	0		Oct.	926,329	1,222,581	1,270,484	1,372,822
Feb.	332,569	388,773	19		Nov.	876,498	1,209,701	5,106,952	5,148,944
2nd Qtr.	704,707	854,326	19		2nd Qtr.	2,864,070	3,828,719	8,090,215	8,265,970
Mar.	593,592	683,203	12		Dec.	1,146,248	1,384,778	2,537,116	2,566,987
Apr.	662,637	739,543	50		Jan.	1,846,528	2,038,574	4,086,315	4,154,507
May	113,606	140,762	0		Feb.	1,318,218	1,605,421	9,164,122	9,210,252
3rd Qtr.	1,369,835	1,563,508	62		3rd Qtr.	4,310,994	5,028,773	15,787,553	15,931,746
June	347,181	376,601	0		Mar.	1,163,560	1,280,709	6,426,933	6,482,646
July	257,479	275,042	0		Apr.	986,537	1,063,805	3,701,098	3,737,802
Aug.	169,701	207,314	7,229		May	876,452	961,089	4,721,106	4,756,988
4th Qtr.	774,361	858,957	7,229		4th Qtr.	3,026,549	3,305,603	14,849,137	14,977,436
Total	3,410,742	3,903,787	7,349		Total	11,301,488	13,939,014	45,717,190	46,253,589
1988/89					1988/89				
Sept.	148,437	177,913	0		June	1,596,106	1,700,185	5,680,015	5,772,502
Oct.	296,701	308,058	3,673		July	930,207	1,029,127	2,276,583	2,365,501
Nov.	180,789	233,514	0		Aug.	317,223	417,363	4,298,356	4,485,006
1st Qtr.	625,927	719,485	3,673		1st Qtr.	2,843,536	3,146,675	12,254,954	12,623,009
Dec.	106,151	173,241	0		Sept.	240,729	365,319	2,059,442	2,367,645
Jan.	307,023	723,699	0		Oct.	402,245	555,196	3,995,388	4,239,340
Feb.	178,260	591,385	15,130		Nov.	1,523,621	1,651,752	5,834,991	6,184,617
2nd Qtr.	591,434	1,488,325	15,130		2nd Qtr.	2,166,595	2,572,267	11,889,821	12,791,602
Mar.	420,381	742,935	0		Dec.	490,420	578,085	4,696,591	5,153,441
Apr.	633,060	845,387	5		Jan.	729,443	838,489	6,100,483	6,906,243
May	162,021	356,329	0		Feb.	1,627,551	1,720,819	9,313,487	10,172,629
3rd Qtr.	1,215,462	1,944,651	5		3rd Qtr.	2,847,414	3,137,393	20,110,561	22,232,313
June	33,363	212,637	14		Mar.	762,924	851,359	7,169,256	8,042,377
July	223,459	382,968	0		Apr.	753,742	857,654	4,750,564	5,431,135
Aug.	93,469	348,056	0		May	1,136,714	1,239,385	6,723,912	7,307,316
4th Qtr.	350,291	943,661	14		4th Qtr.	2,653,380	2,948,398	18,643,732	20,780,828
Total	2,783,114	5,096,122	18,822		Total	10,510,925	11,804,733	62,899,068	68,427,752
1989/90					1989/90				
Sept.	38,078	278,865	0		June	1,649,125	1,745,195	3,146,832	3,791,155
Oct.	307,119	553,242	0		July	571,185	661,468	6,440,929	6,730,677
Nov.	297,019	545,010	0		Aug.	1,356,499	1,456,086	7,372,277	7,823,880
1st Qtr.	642,216	1,377,117	0		1st Qtr.	3,576,809	3,862,749	16,960,038	18,345,712
Dec.	196,134	568,554	0		Sept.	263,515	360,996	5,871,691	6,236,194
Jan.	247,828	427,823	0		Oct.	204,334	283,661	4,460,867	4,779,170
Feb.	92,762	248,372	0		Nov.	1,517,596	1,674,049	7,146,334	7,452,067
2nd Qtr.	536,724	1,244,749	0		2nd Qtr.	1,985,445	2,318,706	17,478,892	18,467,431
Mar.	182,222	320,108	74,979		Dec.	2,157,989	2,471,341	13,163,137	13,441,248
Apr.					Jan.	823,485	951,218	4,913,651	5,106,850
May					Feb.	1,396,491	1,556,043	4,198,054	4,343,569
3rd Qtr.					3rd Qtr.	4,377,965	4,978,602	22,274,842	22,891,667
June					Mar.	1,412,309	1,513,346	3,990,713	4,076,976
July					Apr.				
Aug.					May				
4th Qtr.					4th Qtr.				
Total					Total				

1/ Corn includes grain only (yellow dent corn, other), seed, and cornmeal. Sorghum is grain only. Barley includes grain only barley for malting, other), pearl barley, milled and malting. Oats include grain (hulled or unhulled), unhull oats fit and unfit for human consumption, and oatmeal fit for human consumption.

Source: Bureau of the Census, U.S. Department of Commerce.

Appendix table 16--Shipments of grain on the Illinois Waterway and the Mississippi River, 1981/82 to 1989/90

Crop year	Sept.	Oct.	Nov.	Dec.	Jan.	Million bushels
1981/82	3.4	3.4	4.6	3.9	1.2	
1982/83	4.1	3.2	4.2	3.2	2.7	
1983/84	5.3	4.9	5.7	4.4	1.0	
1984/85	3.1	4.6	5.5	3.1	2.0	
1985/86	2.4	2.6	4.3	3.3	1.8	
1986/87	3.2	3.1	5.2	2.4	1.2	
1987/88	3.3	3.8	3.9	2.9	1.9	
1988/89	3.3	3.3	3.9	3.5	1.7	
1989/90	3.0	3.9	4.7	2.5	2.2	

Source: Mississippi River Barge Traffic, U.S. Army Corps of Engineers, River and Harbor Report, 1990.

Appendix table 17--Barge rates for grain shipments to New Orleans, Louisiana, 1984/85 to 1989/90

Crop year	Origin	Sept.	Oct.	Nov.	Dec.	Jan.
1984/85	Peoria, IL	7.77	8.07	6.71	5.79	7.34
	St Louis, MO	5.94	5.92	5.15	3.98	4.36
1985/86	Peoria, IL	5.26	7.93	6.48	9.08	7.22
	St Louis, MO	4.32	6.42	4.80	5.35	4.35
1986/87	Peoria, IL	8.37	10.54	6.64	5.16	4.95
	St Louis, MO	6.52	7.52	5.06	3.62	3.28
1987/88	Peoria, IL	8.66	9.04	7.38	5.68	7.32
	St Louis, MO	6.58	6.97	5.73	4.29	4.35
1988/89	Peoria, IL	9.80	10.32	7.88	8.81	7.32
	St Louis, MO	7.91	8.35	5.94	6.11	5.15
1989/90	Peoria, IL	5.89	10.49	10.87	12.15	9.13
	St Louis, MO	4.64	7.90	6.84	7.05	5.23

1/ Assumes all traffic on the Illinois River originates at Peoria, IL.

Source: Based on rates reported by Transportation Situation, Illinois Department of Transportation, 1990.

Mississippi River (Locks 11-22), 1981/82-1988/89

	Feb.	Mar.	Apr.	May	June	July	Aug.	Average
Million tons								
0.8	2.1	4.1	3.8	4.4	3.9	5.0	3.4	
2.3	3.8	3.3	3.9	4.2	4.2	4.8	3.6	
3.6	4.5	5.3	4.4	3.7	3.4	3.3	4.1	
0.9	3.1	4.1	3.1	3.2	3.4	3.0	3.3	
1.7	2.9	3.4	3.6	3.2	2.5	3.3	2.9	
1.7	3.6	3.8	4.0	3.8	2.8	3.5	3.2	
2.0	3.0	4.2	4.3	3.6	2.7	3.3	3.2	
1.5	2.6	3.5	4.3	4.1	3.9	3.4	3.3	
2.2	3.5	4.5						3.3

rs, Rock Island District.

Louisiana 1/

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Average
--Dollars per ton--								
7.34	6.87	5.73	5.08	4.33	4.76	4.83	4.63	5.99
4.36	4.20	3.88	3.79	3.29	3.39	3.34	3.64	4.24
7.22	5.64	4.28	4.13	3.90	3.70	3.70	6.21	5.63
4.39	3.87	3.18	3.14	2.97	2.99	2.96	4.62	4.08
4.95	5.23	6.96	5.88	5.44	6.16	6.15	6.46	6.50
3.28	3.52	5.27	4.54	3.77	4.30	4.37	4.99	4.73
7.32	6.89	8.16	7.25	6.19	9.86	9.79	7.61	7.82
4.39	4.59	6.13	5.47	4.65	7.56	6.81	6.46	5.80
7.32	7.26	7.08	5.85	5.34	6.13	4.92	5.13	7.15
5.19	5.31	5.40	4.18	3.72	4.44	3.68	3.92	5.35
9.13	7.32	6.43	7.70					8.75
5.23	5.07	4.92	5.64					5.91

IL.

ois Dept. of Agriculture.

Appendix table 18--Weekly average of rail car loadings of grain and soy

Year	Sept.	Oct.	Nov.	Dec.	Jan.	Car
1979/80	28,576	32,118	32,558	30,500	30,504	3
1980/81	32,127	24,114	31,450	28,106	34,396	3
1981/82	25,607	25,609	27,419	22,384	22,967	2
1982/83	20,321	29,523	25,350	21,888	24,700	2
1983/84	29,735	31,414	29,515	25,927	31,068	2
1984/85	29,162	24,482	28,587	25,441	25,310	2
1985/86	18,889	26,227	28,214	23,482	25,424	2
1986/87	27,329	33,605	29,877	24,827	23,086	2
1987/88	32,977	32,820	29,947	29,225	32,223	3
1988/89	29,014	30,628	27,140	27,120	30,324	3
1989/90	24,364	28,894	31,721	29,422	32,691	3

Source: Association of American Railroads.

Appendix table 19--Rail freight rate index for grain, crop years 1979/8
(December 1984=100)

Year	Sept.	Oct.	Nov.	Dec.	Jan.
1979/80	64.2	69.5	69.6	70.2	70.2
1980/81	78.3	78.8	78.8	79.2	83.1
1981/82	88.5	89.4	89.4	89.4	93.6
1982/83	93.0	93.0	93.0	93.0	93.9
1983/84	93.9	94.2	94.2	94.2	98.0
1984/85	98.4	100.0	100.0	100.0	100.0
1985/86	98.0	98.0	98.0	98.0	98.9
1986/87	99.2	98.5	98.5	97.8	98.3
1987/88	98.9	99.2	99.1	98.5	101.2
1988/89	109.3	108.3	108.5	108.2	109.2
1989/90	108.4	108.6	108.7	108.7	109.2

Source: Bureau of Labor Statistics, U.S. Dept. of Labor.

d soybeans, 1979/80-1989/90

Feb.	Mar.	Apr.	May	June	July	Aug.	Average
Carloads							
31,025	30,170	26,546	23,606	28,333	32,584	32,921	29,953
31,108	27,657	23,490	21,291	28,014	22,162	26,152	27,506
27,220	26,813	25,798	23,755	22,540	27,020	25,123	25,188
26,318	26,807	21,243	20,849	21,393	27,942	27,461	24,483
29,105	27,666	26,784	23,616	24,335	26,632	29,848	27,970
23,688	23,340	20,164	17,715	24,724	22,662	20,218	23,791
22,558	20,648	17,743	17,673	24,907	24,426	24,342	22,878
26,663	27,134	25,046	26,189	32,154	32,257	30,825	28,249
34,224	34,241	32,963	30,861	33,316	29,678	27,010	31,624
30,583	31,436	30,181	25,942	27,305	25,055	25,905	28,386
32,378	29,486	27,938					29,612

1979/80-1989/90

Feb.	Mar.	Apr.	May	June	July	Aug.	Average
71.4	70.5	72.7	72.8	73.3	76.6	76.9	71.5
84.1	85.0	84.8	84.8	85.7	88.0	88.5	83.3
93.6	93.6	93.6	93.6	93.6	93.6	93.6	92.1
93.9	93.9	93.9	93.9	93.9	93.9	93.9	93.6
98.0	98.0	98.0	98.0	98.0	98.4	98.4	96.8
100.0	99.3	99.3	98.7	97.3	96.4	96.3	98.8
99.0	99.0	99.1	99.2	99.2	99.2	99.2	98.7
98.3	98.8	98.6	98.5	98.6	98.6	98.5	98.5
101.2	101.4	102.7	104.1	104.3	106.4	109.3	102.2
109.2	108.8	108.8	108.8	108.0	108.4	108.4	108.7
109.0	109.2	110.3					109.0

Appendix table 20--Hay (all): Acreage, supply, and disappearance, 1983/84-1989/90

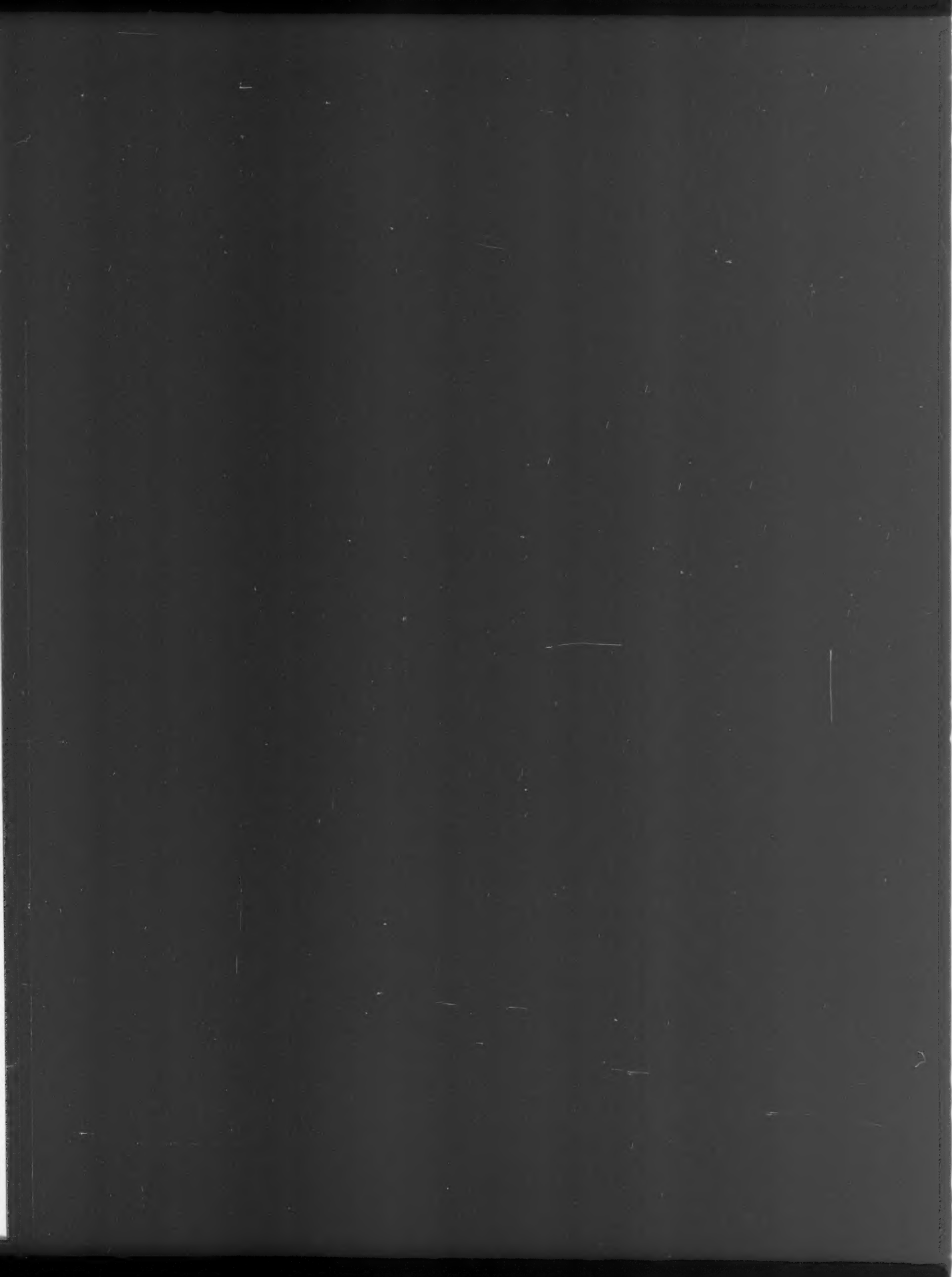
Item	Unit	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90
Acreage harvested	Mil. acres	59.7	61.4	60.4	62.4	60.1	65.1	63.4
Yield per acre	Tons	2.36	2.45	2.46	2.49	2.45	1.94	2.29
Carryover (May 1)	Mil. tons	28.1	20.1	26.9	26.7	32.3	27.1	17.5
Production	"	140.8	150.6	148.6	155.5	147.5	126.0	145.4
Supply	"	168.9	170.7	175.5	182.2	179.8	153.1	162.9
Disappearance	"	148.8	143.8	148.8	149.9	152.7	135.6	140.0
Roughage-consuming animal units (RCAU's)	Mil. units	86.7	83.2	80.5	78.3	76.3	76.3	76.3
Supply per RCAU	Tons	1.95	2.05	2.18	2.33	2.36	2.01	2.13
Disappearance per RCAU	"	1.72	1.73	1.85	1.91	2.00	1.78	1.83

Appendix table 21--Hay: Average prices received by farmers, United States by months, 1983/84-1989/90 1/

Year	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Average 2/
\$ / ton													
Alfalfa:													
1983/84	83.80	78.30	77.40	77.40	79.10	82.40	80.10	81.70	82.00	85.10	84.40	84.30	81.33
1984/85	87.10	80.10	75.60	72.80	73.90	76.70	74.30	77.50	76.20	76.40	75.80	76.70	76.93
1985/86	85.50	74.90	72.50	68.10	70.70	70.50	67.70	69.10	70.20	71.30	72.00	69.80	71.86
1986/87	69.50	64.10	61.40	60.10	58.80	59.90	57.90	60.70	58.80	61.10	62.80	67.90	61.92
1987/88	77.70	67.40	65.70	64.60	69.30	68.00	64.60	68.80	66.50	69.60	72.50	76.90	69.31
1988/89	85.50	82.70	88.10	86.70	89.40	92.00	92.80	96.40	98.30	101.00	106.00	107.00	93.83
1989/90	107.00	99.80	90.60	87.70	90.70	92.20	91.70	91.70	93.50	94.10	96.90	3/ 99.10	94.58
Other hay:													
1983/84	58.90	56.10	54.30	52.90	57.80	59.50	62.10	64.30	63.30	63.80	64.90	66.50	60.37
1984/85	64.90	63.40	61.80	60.90	62.40	62.00	62.60	64.80	64.70	61.70	58.40	62.40	62.50
1985/86	58.70	54.00	57.00	58.40	58.60	58.20	55.30	56.00	56.10	56.00	54.80	54.90	56.50
1986/87	54.00	50.90	50.00	51.00	52.70	50.00	49.70	49.40	48.10	50.90	48.30	48.20	50.27
1987/88	51.00	49.60	50.00	52.20	52.40	53.00	53.60	53.30	52.20	51.50	51.70	51.90	52.09
1988/89	57.50	61.60	66.60	68.70	70.60	69.80	72.30	72.50	70.00	72.10	73.60	76.70	70.03
1989/90	78.30	67.50	63.70	63.50	65.90	62.40	62.60	63.30	66.00	66.00	68.40	3/ 65.60	66.10
All hay:													
1983/84	78.10	72.70	71.20	71.20	74.70	76.80	75.10	76.70	76.60	78.70	79.40	79.80	75.80
1984/85	82.50	76.10	72.40	70.40	70.70	73.10	71.40	73.40	73.00	73.10	72.20	72.50	72.70
1985/86	80.80	70.20	67.90	65.20	67.10	67.50	64.30	65.40	65.80	66.70	67.10	66.20	67.60
1986/87	66.70	61.00	58.80	58.20	57.60	57.90	56.00	57.70	56.10	58.50	59.20	64.10	59.70
1987/88	71.70	62.90	61.20	62.70	64.10	64.20	61.10	63.20	62.80	64.60	67.20	71.40	65.10
1988/89	81.10	77.40	82.30	82.10	85.10	86.80	87.60	89.60	89.50	91.80	96.90	101.00	85.20
1989/90	103.00	93.30	84.40	81.90	84.70	85.10	83.60	83.10	85.00	85.60	88.50	3/ 91.60	86.00

1/ Prices reported for mid-month. 2/ U.S. season average prices weighted by monthly marketings. 3/ Preliminary.

Source: Agricultural Prices, Agricultural Statistics Board, USDA.



Appendix table 22--Processed feeds: Quantity fed, 1981-1989 1/ 2/

	1981	1982	1983
High protein:			
Oilseed meal--			
Soybean 4/	16,070	17,514	15,980
Cottonseed	1,848	1,495	1,022
Linseed	70	94	112
Peanut	107	67	68
Sunflower	200	433	240
Canola	29	53	99
Total	18,324	19,656	17,521
Animal proteins--			
Tankage and meat meal	2,261	2,133	2,102
Fishmeal and solubles	480	412	453
Milk products	303	361	368
Total	3,044	2,906	2,923
Grain protein feeds--			
Gluten feed and meal	904	757	1,281
Brewers' dried grains	239	195	135
Distillers' dried grains	448	682	564
Total	1,591	1,634	1,980
Other:			
Wheat millfeeds	4,848	5,139	5,078
Rice millfeeds	513	434	461
Dried and molasses beetpulp	934	519	536
Alfalfa meal	899	887	898
Fats and oils	629	659	670
Molasses, inedible	1694	2322	2070
Miscellaneous byproduct feeds 5/	1,270	1,270	1,267
Total	10,787	11,230	10,980
Grand total	33,746	35,426	33,404

1/ Year beginning October. 2/ Adjusted for stocks, productions, foreign
4/ Includes use in edible soy products and shipments to U.S. territories.

1983	1984	1985	1986	1987	1988	1989 3/
---- 1,000 metric tons ----						
980	17,672	17,318	18,495	19,317	17,983	19,299
022	1,595	1,379	1,026	1,442	1,467	1,298
112	106	105	119	116	96	103
68	111	161	94	112	165	170
240	307	313	269	381	299	260
99	145	121	206	206	279	270
521	19,936	19,397	20,209	21,574	20,289	21,400
102	2,523	2,540	2,395	2,457	2,340	2,470
453	589	464	471	345	205	350
368	386	373	396	399	395	400
923	3,498	3,377	3,262	3,201	2,940	3,220
281	1,876	1,055	1,165	1,484	1,213	1,249
135	142	135	146	120	114	125
564	807	873	805	1,035	830	850
980	2,825	2,063	2,116	2,639	2,157	2,224
078	5,084	5,278	5,715	5,652	5,652	5,767
461	456	503	610	551	615	600
536	728	701	645	699	625	700
898	808	777	589	554	410	400
670	672	765	832	826	944	950
2070	2407	1887	1771	1598	1593	1600
267	1,267	1,267	1,267	1,267	1,267	1,267
980	11,422	11,178	11,429	11,147	11,106	11,284
404	37,681	36,015	37,016	38,561	36,492	38,128

foreign trade, and nonfeed uses where applicable. 3/ Forecast.
ries. 5/ Allowance for hominy feed, oat millfeeds, and screenings.

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